

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.98
Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump
Pump designation : PE6P120A32ORS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1381K
Governor no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information
Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

A01

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.35
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve
travel mm : 7.47
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 820
guide sleeve
travel mm : 5.14
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.34
Tolerance mm : ± 0.25

A02

Rated speed rpm : 1282
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure

hPa : 1500
Del. quantity

cm³/1000 strokes : 245.0
Tolerance

cm³/1000 strokes : ± 1.0
Check tolerance

cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.50

Rated speed rpm : 1045
Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1130

Tolerance 1/min : ± 15
Check

speed 1/min : ± 20

rack travel mm : 0.70
Tolerance mm : ± 0.70

Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 275
rack travel mm : 3.70
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.35
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.50
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 11.30
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500

A03

rack travel mm : 11.85
Tolerance mm : ± 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : ± 0.20

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.98
Test oil : ISO 4113
Combination No. : 0 402 648 708
Injection pump
Pump designation : PE8P120A320LS7927
EP type number : 0 412 628 934

Governor
Governor design. : RQ300/1050PA1389
Governor no. : 0 421 801 836

Cust. part No. :

Customer-spec. information
Customer : DHI
Motor : DV15TIS Euro II
Power KW : 310.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

A05

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 258.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000s.	: ± 4.0
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Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 7.0
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Check tolerance	
cm ³ /1000s.	: 10.0
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Rated speed rpm	: 300
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Rack travel in mm	: 6.00
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 18.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000s.	: ± 6.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000s.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1108
guide sleeve	
travel mm	: 6.36
Tolerance mm	: ± 0.15
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Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.31
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 1050
guide sleeve	
travel mm	: 6.00
Tolerance mm	: ± 0.10
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Rated speed rpm	: 441

guide sleeve	
travel mm	: 3.98
Tolerance mm	: ± 0.10
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Rated speed rpm	: 560
guide sleeve	
travel mm	: 6.00
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1290
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: 106
Rated speed rpm	: 800
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Rack travel in mm	: 19.40
Tolerance mm	: ± 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 1800
Del. quantity	
cm ³ /1000 strokes	: 258.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000s.	: ± 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 7.0
Check tolerance	
cm ³ /1000s.	: 10.0

CONTROL LEVER

control lever	
position degree	: 34.0
tolerance degree	: ± 4.0
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control lever	
position degree	: 96.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 12.60
Rated speed rpm	: 1102
Tolerance 1/min	: ± 8

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

control lever
position degree : 10.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.85
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.85
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 12.65
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

A07

Pressure hPa : 1800
rack travel mm : 13.85
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + 0.20

2-stage LDA setting

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.65

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 11.70
Tolerance mm : + 0.20

Pressure hPa : 300
rack travel mm : 9.60
Tolerance mm : + 0.05

Pressure hPa : 1400
rack travel mm : 13.50
Tolerance mm : + 0.10

Pressure hPa : 1200
rack travel mm : 12.90
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 205
Rated speed rpm : < 250

Check
speed 1/min : > 185

Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 800
Rated speed rpm : 500
rack travel mm : 12.65
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 229.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 128.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 233.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.98
Test oil : ISO 4113

Combination No. : 0 402 648 785

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RQV350...1050PA1318
Governor no. : 0 421 814 185

Cust. part No. : 0270746302

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

A09

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1106
guide sleeve

travel mm : 8.02
Tolerance mm : ± 0.15

Rated speed rpm : 350
guide sleeve

travel mm : 1.48
Tolerance mm : ± 0.20

Rated speed rpm : 900
guide sleeve

travel mm : 5.69
Tolerance mm : ± 0.25

Rated speed rpm : 580

guide sleeve
travel mm : 3.62
Tolerance mm : ± 0.25

Rated speed rpm : 1204
guide sleeve

travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1300
guide sleeve

travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1174

Rack travel in mm : 11.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure

hPa : 1800
Del. quantity

cm³/1000 strokes : 272.0
Tolerance

cm³/1000 strokes : ± 1.0
Check tolerance

cm³/1000S. : ± 4.0
Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 350
rack travel mm : 4.80
Tolerance mm : ± 0.10

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.30
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 8.40
Tolerance mm : ± 0.20

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 700
rack travel mm : 5.00
Tolerance mm : ± 0.20

Pressure hPa : 180

rack travel mm : 0.40
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

REDUCED QUANTITY

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
rack travel mm : 11.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.80
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.98
Test oil : ISO 4113
Combination No. : 0 402 648 967
Injection pump
Pump designation : PE8P12CA320LS7871
EP type number : 0 412 628 877
Governor
Governor design. : RQV300...1050PA1078
 : -1K
Governor no. : 0 421 815 361
Cust. part No. : 9275447

Customer-spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power Kw : 400.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Overflow quantity
min. L/h : 190
Tolerance L/h : ± 20.0
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

A13

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 12.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.90
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
guide sleeve
travel mm : 10.38
Tolerance mm : +- 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : +- 0.25

Rated speed rpm : 746
guide sleeve
travel mm : 6.20
Tolerance mm : +- 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 2.45
Tolerance mm : +- 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 3.18
Tolerance mm : +- 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.66
Tolerance mm : +- 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 10.80
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.75
Rated speed rpm : 1110
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 10.45
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.40
Tolerance mm : ± 0.15

Rated speed rpm : 950
rack travel mm : 12.60
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1600
rack travel mm : 10.45
Tolerance mm : ± 0.10

Rated speed rpm : 550

A15

Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 630
rack travel mm : 10.10
Tolerance mm : ± 0.05

Pressure hPa : 575
rack travel mm : 9.75
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 292.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 10.45
Tolerance mm : ± 0.10

Aneroid pressure
hPa : 1600
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 299.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 242.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.15
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 20.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.98
Test oil : ISO 4113

Combination No. : 0 402 648 967A

Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0 412 628 877

Governor
Governor design. : RQV300...1050PA1078
 : -1K
Governor no. : 0 421 815 361

Cust. part No. : 9275448

Customer-spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 190
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.90

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
guide sleeve
travel mm : 10.38
Tolerance mm : + 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : + 0.25

Rated speed rpm : 746
guide sleeve
travel mm : 6.20
Tolerance mm : + 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 2.45
Tolerance mm : + 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 3.18
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.66
Tolerance mm : + 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 10.80
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.75
Rated speed rpm : 1110
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 10.45
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.40
Tolerance mm : ± 0.15

Rated speed rpm : 950
rack travel mm : 12.60
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1600
rack travel mm : 10.45
Tolerance mm : ± 0.10

Rated speed rpm : 550

A19

Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 630
rack travel mm : 10.10
Tolerance mm : ± 0.05

Pressure hPa : 575
rack travel mm : 9.75
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 292.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 10.45
Tolerance mm : ± 0.10

Aneroid pressure
hPa : 1600
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 299.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 242.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.15
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 20.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.98
Test oil : ISO 4113

Combination No. : 0 402 744 809

Injection pump
Pump designation : PES4P120A32ORS7312
: -1
EP type number : 0 412 724 803

Governor
Governor design. : RQV400...1200PA1397
Governor no. : 0 421 814 212

Cust. part No. : 51.11103-7579

Customer-spec. information

Customer : MAN
Motor : D 0824 LOH 05
Power Kw : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

A21

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1261
guide sleeve
travel mm : 10.26
Tolerance mm : +- 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 2.21
Tolerance mm : +- 0.20

Rated speed rpm : 822
guide sleeve
travel mm : 5.79
Tolerance mm : +- 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.53
Tolerance mm : +- 0.25

Rated speed rpm : 1490

guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 1322

Rack travel in mm : 11.80
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 302.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1250
Tolerance 1/min : +- 8

rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 262.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 494
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : ± 0.05

Rated speed rpm : 1200
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 12.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.80
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.60
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 140
rack travel mm : 8.90
Tolerance mm : ± 0.10

Pressure hPa : 450
rack travel mm : 11.80
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
rack travel mm : 12.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.06.98
Test oil : ISO 4113

Combination No. : 0 402 746 609

Injection pump
Pump designation : PES6P130A720RS7411
EP type number : 0 412 736 808

Governor
Governor design. : RQ275/950PA1274
Governor no. : 0 421 801 807

Cust. part No. : 645 739

Customer-spec. information
Customer : RABA
Motor : SIEHE BEMERKUNG
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	224.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	

Rated speed rpm :	275
<hr/>	
Rack travel in mm :	4.20
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	24.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spread	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1007
guide sleeve	
travel mm :	6.56
Tolerance mm :	+ 0.15
<hr/>	
Rated speed rpm :	275
guide sleeve	
travel mm :	2.06
Tolerance mm :	+ 0.20
<hr/>	
Rated speed rpm :	950
guide sleeve	
travel mm :	6.00
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	361

guide sleeve	
travel mm :	4.45
Tolerance mm :	+ 0.10

Rated speed rpm :	450
guide sleeve	
travel mm :	6.00
Tolerance mm :	+ 0.10

Rated speed rpm :	1200
guide sleeve	
travel mm :	11.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

control lever	
position degree :	109
Rated speed rpm :	900

Rack travel in mm :	20.00
Tolerance mm :	+ 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	600
Aneroid pressure	
hPa :	1500
Del. quantity	
cm ³ /1000 strokes :	224.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	
Tolerance	
cm ³ /1000 strokes :	5.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree :	33.0
tolerance degree :	+ 4.0

control lever	
position degree :	95.0
tolerance degree :	+ 4.0

RATED SPEED	
rack travel mm :	10.90
Rated speed rpm :	995
Tolerance 1/min :	+ 5

rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 275
rack travel mm : 4.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 335
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 11.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.20
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 260
rack travel mm : 9.20
Tolerance mm : ± 0.15

Pressure hPa : 440
rack travel mm : 11.00
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 175
Rated speed rpm : < 200

Check
speed 1/min : > 155
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 219.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50

Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 24.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.98
Test oil : ISO 4113

Combination No. : 0 402 846 302

Injection pump
Pump designation : PE6P120A32ORS8520
EP type number : 0 412 826 202

Governor
Governor design. : RQV275...1000PA1269K
Governor no. : 0 421 815 969

Cust. part No. : 1310222/2

Customer-spec. information

Customer : DAF
Motor : XF 355 M
Power KW : 355.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

B01

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 344.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 9.97
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 399
guide sleeve
travel mm : 3.65
Tolerance mm : ± 0.25

Rated speed rpm : 1260

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1121

Rack travel in mm : 13.30
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 344.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.05
Rated speed rpm : 1045

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1140

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.70
Tolerance mm : ± 0.70

Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 6.70

Testing:

Rated speed rpm : 275
rack travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 14.05
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.05
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 12.45
Tolerance mm : ± 0.10

Rated speed rpm : 980
rack travel mm : 14.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 14.05
Tolerance mm : ± 0.05

B03

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 980
Pressure hPa : 750
rack travel mm : 12.80
Tolerance mm : ± 0.05

Pressure hPa : 380
rack travel mm : 10.30
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 361.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.05.98
Test oil : ISO 4113
Combination No. : 0 403 476 146
Injection pump
Pump designation : PES6MW100/32ORS1245
EP type number : 0 413 406 247
Governor
Governor design. : RSV300...1100MWOA400
Governor no. : 0 420 085 293
Cust. part No. : 11032700 P02 v.02.98

Customer-spec. information
Customer : VCE
Motor : TD 63KDE
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 2 417 413 046
Inlet press. bar : 1.5
Tolerance L/h : +- 20.0
Test nozzle holde
assembly : 0 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : +- 1.0
Prestroke mm : 3.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.90
Tolerance mm : +- 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75
Start of delivery mark
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.40
Tolerance mm : +- 0.05
Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 315

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

B06

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 81.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1140
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1420

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 106.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 315
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 315

rack travel mm : 5.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.40
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.50
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 12.70
Tolerance mm : + 0.20

Rated speed rpm : 740
rack travel mm : 13.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 620
rack travel mm : 2.20
Tolerance mm : + 0.20

Pressure hPa : 120
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

rack travel mm : 12.70
Tolerance mm : + 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 315
Rack travel in mm : 5.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 400 463 115

Injection pump
Pump designation : PES3A80D320/3RS1299
EP type number : 0 410 483 015

Governor
Governor design. : RSV325...1500A2C505R
Governor no. : 0 420 233 187

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D226-3

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

B09

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke in mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1480

Rack travel in mm : 9.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 48.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 7.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 48.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.00
Rated speed rpm : 1525
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1560
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1720

rack travel mm : 4.00
Rated speed rpm : 1570
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 7.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 485
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1480
rack travel mm : 9.00
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : +- 0.75
Del. quantity
cm³/1000 strokes : 93.5
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.50
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.98
Test oil : ISO 4113

Combination No. : 0 400 866 227

Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...1250A5C870L
Governor no. : 0 420 232 625

Cust. part No. : 0423 1964 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF6L 913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : ± 0.10

Del. quantity
cm3/1000 strokes : 14.5

Tolerance
cm3/1000 strokes : ± 2.0

Check tolerance
cm3/1000S. : ± 4.5

Spreed
Tolerance

cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 82.5

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1355

Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10

Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 9.60

Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 600

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.00

Tolerance mm : +- 0.05
Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : +- 0.10

Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.10
Tolerance mm : +- 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 13.80
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : +- 7.5
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.98
Test oil : ISO 4113

Combination No. : 0 400 866 229

Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...1250A5C873L
Governor no. : 0 420 232 628

Cust. part No. : 0423 2077 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF6L 913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 14.5
Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed

Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(E) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 82.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.00

Tolerance mm : ± 0.05
Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.10
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 13.80
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.06.98
Test oil : ISO 4113

Combination No. : 0 402 076 823

Injection pump
Pump designation : PES6P120A72ORS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -10
Governor no. : 0 421 833 620

Cust. part No. : RE502438

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1160
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00
Testing:
Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 575
rack travel mm : 11.20
Tolerance mm : +- 0.20

Pressure hPa : 360
rack travel mm : 10.40
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.70
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.06.98
Test oil : ISO 4113

Combination No. : 0 402 076 824

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -11
Governor no. : 0 421 833 621

Cust. part No. : RE502439

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 133.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 26.0

Tolerance
 cm³/1000 strokes : + 2.0

Check tolerance
 cm³/1000S. : + 4.5

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 133.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 97.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 1160
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1215
 Tolerance 1/min : + 5

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1350

rack travel mm : 4.00
 Rated speed rpm : 1225
 Tolerance 1/min : +- 15

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 5.20
 Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 575
rack travel mm : 11.20
Tolerance mm : + 0.20

Pressure hPa : 360
rack travel mm : 10.40
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 791

Injection pump
Pump designation : PES6P120A32ORS3139
EP type number : 0 412 026 718

Governor
Governor design. : RQV275...95OPA728-4
Governor no. : 0 421 813 678

Cust. part No. :

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 063540 H
Power KW : 264.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 9.00
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 0.50

CRT ZERO POSITION

Rack travel in mm : 13.35
Tolerance mm : +- 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 213.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.50
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
guide sleeve
travel mm : 6.80
Tolerance mm : +- 0.10

Rated speed rpm : 275
guide sleeve
travel mm : 1.50
Tolerance mm : +- 0.10

Rated speed rpm : 800
guide sleeve
travel mm : 5.80
Tolerance mm : +- 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.50
Tolerance mm : +- 0.20

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1125

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1020
Tolerance 1/min : +- 5

rack travel mm : -9.30
Rated speed rpm : 1175
Tolerance 1/min : +- 15

rack travel mm : -12.85
Tolerance mm : +- 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 69.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : < -5.70

Testing:

Rated speed rpm : 275
rack travel mm : -7.50
Tolerance mm : ± 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 950
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -4.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : -1.00
Tolerance mm : ± 0.10

Pressure hPa : 200
rack travel mm : -3.35
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -7.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 402 046 882

Injection pump
Pump designation : PES6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQV325...1250PA1385
Governor no. : 0 421 814 209

Cust. part No. : 1351707

Customer-spec. information

Customer : DAF
Motor : NS177M-CBP
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.80
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0- 60- 120- 180
 : - 240- 300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.70

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.80
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 154.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1303
guide sleeve

travel mm : 10.33
Tolerance mm : +- 0.15

Rated speed rpm : 325
guide sleeve

travel mm : 1.25
Tolerance mm : +- 0.20

Rated speed rpm : 865
guide sleeve

travel mm : 5.43
Tolerance mm : +- 0.25

Rated speed rpm : 520
guide sleeve

travel mm : 3.02
Tolerance mm : +- 0.25

Rated speed rpm : 1510
guide sleeve

travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1360

Rack travel in mm : 11.80

Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 154.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 123.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.80

Rated speed rpm : 1290

Tolerance 1/min : +- 5

Check
speed 1/min : +- 10

rack travel mm : 4.00

Rated speed rpm : 1375

Tolerance 1/min : +- 15

Check
speed 1/min : +- 20

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : +- 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.80
Tolerance mm : +- 0.10

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 7.10
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 210
rack travel mm : 8.60
Tolerance mm : +- 0.10

Pressure hPa : 410
rack travel mm : 11.40
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.40
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.98
Test oil : ISO 4113

Combination No. : 0 402 074 700

Injection pump
Pump designation : PES4P110B720RS3383
EP type number : 0 412 014 701

Governor
Governor design. : RSV300...1100P1A667
Governor no. : 0 421 833 582

Cust. part No. : 9882855

Customer-spec. information
Customer : LIEBHERR
Motor : D 924 TI-E A2
Power KW : 137.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 207.0
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

C05

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 12.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.35
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.5

Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980

Aneroid pressure
hPa : 1220

Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.5

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 105.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : +- 15

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1028
rack travel mm : 11.10

Rated speed rpm : 1083
Tolerance 1/min : +- 4
rack travel mm : 4.00

Rated speed rpm : 1029
rack travel mm : 11.10

Rated speed rpm : 1084
Tolerance 1/min : +- 4
rack travel mm : 4.00

Rated speed rpm : 1030
rack travel mm : 11.10

Rated speed rpm : 1085
Tolerance 1/min : +- 4
rack travel mm : 4.00

Rated speed rpm : 1031
rack travel mm : 11.10

Rated speed rpm : 1086
Tolerance 1/min : +- 4
rack travel mm : 4.00

Rated speed rpm : 1032
rack travel mm : 11.10

Rated speed rpm : 1087
Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1033
rack travel mm : 11.10

Rated speed rpm : 1088
Tolerance 1/min : \pm 4
rack travel mm : 4.00

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.85
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.35
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 495
Tolerance 1/min : \pm 50

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1220
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 730
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 11.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1220
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 193.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1220
Rated speed rpm : 700
rack travel mm : 12.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 186.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : +- 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.35
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.98
Test oil : ISO 4113

Combination No. : 0 402 074 700C

Injection pump
Pump designation : PES4P110B720RS3383
EP type number : 0 412 014 701

Governor
Governor design. : RSV300...1100P1A667
Governor no. : 0 421 833 582

Cust. part No. : 9882855

Customer-spec. information
Customer : LIEBHERR
Motor : D 924 TI-E A2
Power KW : 137.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

C09

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 12.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm3/1000S. : +- 3.5

Spread

Tolerance
 cm3/1000 strokes : 4.0

Check tolerance
 cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.35
 Tolerance mm : +- 0.10

Del. quantity
 cm3/1000 strokes : 27.0
 Tolerance
 cm3/1000 strokes : +- 3.0
 Check tolerance
 cm3/1000S. : +- 5.5

Spread
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : +- 0.20

governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
 Aneroid pressure
 hPa : 1220
 Del. quantity
 cm3/1000 strokes : 173.0
 Tolerance
 cm3/1000 strokes : +- 1.0

Check tolerance
 cm3/1000S. : +- 3.5
 Spread
 Tolerance
 cm3/1000 strokes : 4.0
 Check tolerance
 cm3/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 105.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 4.00
 Rated speed rpm : 1080
 Tolerance 1/min : +- 15

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1028
 rack travel mm : 11.10

Rated speed rpm : 1083
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

Rated speed rpm : 1029
 rack travel mm : 11.10

Rated speed rpm : 1084
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

Rated speed rpm : 1030
 rack travel mm : 11.10

Rated speed rpm : 1085
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

Rated speed rpm : 1031
 rack travel mm : 11.10

Rated speed rpm : 1086
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

Rated speed rpm : 1032
 rack travel mm : 11.10

Rated speed rpm : 1087

Tolerance 1/min : +- 4
rack travel mm : 4.00

Rated speed rpm : 1033
rack travel mm : 11.10

Rated speed rpm : 1088
Tolerance 1/min : +- 4
rack travel mm : 4.00

LOW IDLE

control lever
position degree : 73.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.85
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.35
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 495
Tolerance 1/min : +- 50

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 12.10
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 12.10
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1220
rack travel mm : 12.10
Tolerance mm : +- 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 730
rack travel mm : 11.80
Tolerance mm : +- 0.05

Pressure hPa : 670
rack travel mm : 11.30
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1220
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 193.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 1220
Rated speed rpm : 700
rack travel mm : 12.10
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 186.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.35
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump
Pump designation : PE6P120A32ORS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278K
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF
Motor : XF 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1077
guide sleeve
travel mm : 10.24
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 704
guide sleeve
travel mm : 6.53
Tolerance mm : ± 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : ± 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1158

Rack travel in mm : 12.00
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1040

Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1145

Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : +- 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 72.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 8.00

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : +- 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.40
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 12.55
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 12.05
Tolerance mm : +- 0.10

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : +- 0.10

Rated speed rpm : 980
rack travel mm : 13.80
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : +- 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.55
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 980
Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : +- 0.05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : +- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 342.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.05
Tolerance mm : +- 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278
: -1K
Governor no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information
Customer : DAF
Motor : XF 280 M
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 303.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1062
guide sleeve
travel mm : 10.04
Tolerance mm : +- 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : +- 0.20

Rated speed rpm : 697
guide sleeve
travel mm : 6.48
Tolerance mm : +- 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : +- 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1171

Rack travel in mm : 10.70
Tolerance mm : +- 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 303.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.35
Rated speed rpm : 1050
Tolerance 1/min : +- 5

Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : +- 15

Check
speed 1/min : +- 20

rack travel mm : 0.50

Tolerance mm : + 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.80

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.60
Tolerance mm : + 0.05

Rated speed rpm : 980
rack travel mm : 12.35
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 12.60
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.65
Tolerance mm : + 0.05

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : + 0.05

Pressure hPa : 170
rack travel mm : 9.90
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.60
Tolerance mm : + 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.20

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump
Pump designation : PE6P120A32ORS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1300K
Governor no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information

Customer : DAF
Motor : XF 250 M
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.85
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 283.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.20
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 13.5

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 6.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1072
 guide sleeve
 travel mm : 10.16
 Tolerance mm : + 0.15

Rated speed rpm : 275
 guide sleeve
 travel mm : 2.04
 Tolerance mm : + 0.20

Rated speed rpm : 701
 guide sleeve
 travel mm : 6.52
 Tolerance mm : + 0.25

Rated speed rpm : 400
 guide sleeve
 travel mm : 3.92
 Tolerance mm : + 0.25

Rated speed rpm : 1310
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1181

Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1500

Del. quantity
 cm³/1000 strokes : 283.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 1045
 Tolerance 1/min : + 5

Check
 speed 1/min : + 10

rack travel mm : 4.00
 Rated speed rpm : 1140
 Tolerance 1/min : + 15

Check
 speed 1/min : + 20

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.80

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 980
rack travel mm : 11.35
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.50
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 11.20
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : ± 0.05

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.50
Tolerance mm : ± 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1381K
Governor no. : G 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information
Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

C25

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.35
Tolerance mm : ± 0.10

Del. quantity cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve
travel mm : 7.47
Tolerance mm : +- 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : +- 0.20

Rated speed rpm : 820
guide sleeve
travel mm : 5.14
Tolerance mm : +- 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.34
Tolerance mm : +- 0.25

Rated speed rpm : 1282
guide sleeve
travel mm : 12.00
Tolerance mm : +- 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 10.50

Rated speed rpm : 1045
Tolerance 1/min : +- 5

Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1130

Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.70
Tolerance mm : +- 0.70

Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 8.30

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.35
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.50
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 11.30
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500

C27

rack travel mm : 11.85
Tolerance mm : ± 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : ± 0.20

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 283.0
Tolerance

cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

Aneroid pressure

hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.98
Test oil : ISO 4113

Combination No. : 0 402 746 650

Injection pump
Pump designation : PES6P120A32ORS7344
EP type number : 0 412 726 914

Governor
Governor design. : RQ275/1050PA999-6
Governor no. : 0 421 801 785

Cust. part No. : CCEP 5151A 66-230

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062045 M41
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.15
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 11.60
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 287.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 37.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131

guide sleeve
travel mm : 6.38

Tolerance mm : ± 0.10

DJ2

Rated speed rpm : 275
guide sleeve
travel mm : 0.80
Tolerance mm : ± 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 396
guide sleeve
travel mm : 2.99
Tolerance mm : ± 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1350
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Anercid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 287.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 274.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1135
Tolerance 1/min : ± 5

rack travel mm : -7.60
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : -11.10
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 251.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : < -5.80

Testing:

Rated speed rpm : 275
rack travel mm : -7.00
Tolerance mm : ± 0.10

rack travel mm : -9.50
Rated speed rpm : 365
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1050
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

D03

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -3.75
Tolerance mm : ± 0.30

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 560
rack travel mm : -1.35
Tolerance mm : ± 0.15

Pressure hPa : 320
rack travel mm : -2.85
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 225

Check
speed 1/min : > 80
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -7.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.98
Test oil : ISO 4113
Combination No. : 0 402 746 655
Injection pump
Pump designation : PES6P120A320RS7343
EP type number : 0 412 726 915
Governor
Governor design. : RQV300...1000PA1160
: -1K
Governor no. : 0 421 815 559
Cust. part No. : 5168 66-250

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062356 B41
Power KW : 288.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 2 417 413 071
Inlet press. bar : 2.5
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 4.50
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 11.00
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery mark

°NW after s.o.d. : -0.40
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 13.00
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 356.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -8.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 39.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1113
guide sleeve

travel mm : 8.82
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve

travel mm : 1.29

DO6

Tolerance mm : + 0.20

Rated speed rpm : 827
guide sleeve

travel mm : 5.96
Tolerance mm : + 0.25

Rated speed rpm : 550
guide sleeve

travel mm : 3.66
Tolerance mm : + 0.25

Rated speed rpm : 1440
guide sleeve

travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1275

Rack travel in mm : 12.00

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 356.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 296.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : -1.00

Rated speed rpm : 1100
Tolerance 1/min : + 5

rack travel mm : -9.00

Rated speed rpm : 1225
Tolerance 1/min : +- 15

rack travel mm : -12.50
Tolerance mm : +- 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 252.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > -7.00

Testing:

Rated speed rpm : 300
rack travel mm : -8.00
Tolerance mm : +- 0.10

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600
rack travel mm : -0.40
Tolerance mm : +- 0.15

Rated speed rpm : 800
rack travel mm : 0.10
Tolerance mm : +- 0.15

Rated speed rpm : 350
rack travel mm : -1.55
Tolerance mm : +- 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -4.20

D07

Tolerance mm : +- 0.30

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 320
rack travel mm : -3.00
Tolerance mm : +- 0.15

Pressure hPa : 520
rack travel mm : -1.90
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 390.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

rack travel mm : 0.10
Tolerance mm : +- 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25

Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : -8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98
Test oil : ISO 4113

Combination No. : 0 402 846 302

Injection pump
Pump designation : PE6P120A320RS8520
EP type number : 0 412 826 202

Governor
Governor design. : RQV275...1000PA1269K
Governor no. : 0 421 815 969

Cust. part No. : 1310222/2

Customer-spec. information
Customer : DAF
Motor : XF 355 M
Power KW : 355.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 344.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 275

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 9.97
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 399
guide sleeve
travel mm : 3.65
Tolerance mm : ± 0.25

Rated speed rpm : 1260

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1121

Rack travel in mm : 13.30
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 344.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.05
Rated speed rpm : 1045
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 8.50

Testing:

Rated speed rpm : 275
rack travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 14.05
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.05
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 12.45
Tolerance mm : ± 0.10

Rated speed rpm : 980
rack travel mm : 14.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 14.05
Tolerance mm : ± 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 980
Pressure hPa : 750
rack travel mm : 12.80
Tolerance mm : ± 0.05

Pressure hPa : 380
rack travel mm : 10.30
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 361.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 027

Injection pump
Pump designation : PES6P120A320RS8047
EP type number : 0 412 926 029

Governor
Governor design. : RQV275...1250PA1312K
Governor no. : 0 421 815 966

Cust. part No. : CCEP 5160A 66-244

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 06.02.26L71
Power KW : 141.7

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 3.25

CRT ZERO POSITION

Rack travel in mm : 12.00
Tolerance mm : +- 0.05

BASIC SETTING

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -7.10
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 39.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1340

guide sleeve
travel mm : 9.96

Tolerance mm : +- 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : +- 0.20

Rated speed rpm : 923
guide sleeve
travel mm : 6.76
Tolerance mm : +- 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.92
Tolerance mm : +- 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1430

Rack travel in mm : 11.10
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Arieroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 292.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : -1.00

Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : -8.00
Rated speed rpm : 1450
Tolerance 1/min : + 5

rack travel mm : -11.50
Tolerance mm : + 0.55
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 241.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : < -5.70

Testing:

Rated speed rpm : 325
rack travel mm : -7.10
Tolerance mm : + 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1250
Rated speed rpm : 650
rack travel mm : -2.10
Tolerance mm : + 0.10

Rated speed rpm : 350
rack travel mm : -3.25
Tolerance mm : + 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1600
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -

D15

rack travel mm : -4.80
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 240
rack travel mm : -3.20
Tolerance mm : + 0.20

Pressure hPa : 520
rack travel mm : -1.30
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 175
Rated speed rpm : < 240

Check
speed 1/min : > 155
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

rack travel mm : -3.25
Tolerance mm : + 0.25

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : -7.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 400 863 020

Injection pump
Pump designation : PES3A95D410/3RS2905
EP type number : 0 410 893 996

Governor
Governor design. : RSV325...1250A5C858L
Governor no. : 0 420 232 621

Cust. part No. : 0423 1592 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F3L912/913_NEU
Power KW : 40.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1530

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 400 864 099

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C858L
Governor no. : 0 420 232 621

Cust. part No. : 0423 1595 KY

Customer spec. information
Customer : KHD-DMI
Motor : F4L912/913_NEU
Power KW : 54.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1530

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 400 864 102

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C851L
Governor no. : 0 420 232 624

Cust. part No. : 0423 1789 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F4L912/913_NEU
Power Kw : 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance

cm³/1000 strokes : 5.5
Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure

hPa : -
Del. quantity

cm³/1000 strokes : 76.0
Tolerance

cm³/1000 strokes : + 1.0
Check tolerance

cm³/1000S. : + 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.35
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1339
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1510

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 473
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 400 866 222

Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...1250A5C950L
Governor no. : 0 420 232 641

Cust. part No. : 0423 1601 KY

Customer-spec. information
Customer : KHD
Motor : F6L912/913_NEU
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 76.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 11.5

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Spread

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : FREE

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring

pre-tension

click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 76.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 107.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.35

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1550

rack travel mm : 4.00

Rated speed rpm : 1400

Tolerance 1/min : ± 15

LOW IDLE

control lever

position degree : 73.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 8.00

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 8.50

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 595

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.98
Test oil : ISO 4113
Combination No. : 0 400 876 421
Injection pump
Pump designation : PES6A95D32ORS2848
EP type number : 0 410 896 892
Governor
Governor design. : RSV500...1100A5C2269
: R
Governor no. : 0 420 233 338
Cust. part No. :

Customer-spec. information
Customer : VALMET
Motor : 634 DS
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 14.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 500

Rack travel in mm : 4.30

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 4.5

Spread

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 133.0

E02

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1145

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1375

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 500
rack travel mm : 4.30
Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 530

Tolerance 1/min : ± 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.05
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 14.60
Tolerance mm : +- 0.10

Rated speed rpm : 975
rack travel mm : 14.30
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.60
Tolerance mm : +- 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.90
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 13.20
Tolerance mm : +- 0.10

Pressure hPa : 655
rack travel mm : 13.90
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 137.0
Tolerance
cm3/1000 strokes : +- 2.0

E03

Check tolerance
cm3/1000S. : +- 4.0

rack travel mm : 14.30
Tolerance mm : +- 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 103.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : +- 0.75
Del. quantity
cm3/1000 strokes : 195.0
Tolerance
cm3/1000 strokes : +- 7.5
Check tolerance
cm3/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 4.30
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 21.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 855

Injection pump
Pump designation : PES6P110A32ORS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQV325...1300PA1119
Governor no. : 0 421 814 083

Cust. part No. : 1284418/4

Customer-spec. information
Customer : DAF
Motor : NS156M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 144.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : +- 2.5
Check tolerance
cm3/1000S. : +- 5.0

Speed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
guide sleeve
travel mm : 8.29
Tolerance mm : +- 0.20

Rated speed rpm : 325
guide sleeve
travel mm : 1.33
Tolerance mm : +- 0.15

Rated speed rpm : 900
guide sleeve
travel mm : 4.92
Tolerance mm : +- 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.07

Tolerance mm : +- 0.25

Rated speed rpm : 455
guide sleeve
travel mm : 2.52
Tolerance mm : +- 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 2.93
Tolerance mm : +- 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 10.80
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 144.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

Speed

Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1460
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : + 0.05

E06

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 7.35
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : + 0.05

Pressure hPa : 200
rack travel mm : 8.40
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

rack travel mm : 11.85
Tolerance mm : + 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 856

Injection pump
Pump designation : PE6P110A32ORS3329Z
EP type number : 0 412 016 744

Governor
Governor design. : RQV325...1300PA1119
Governor no. : 0 421 814 083

Cust. part No. : 1284417/5

Customer-spec. information
Customer : DAF
Motor : NS133M
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

E08

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
guide sleeve
travel mm : 8.29
Tolerance mm : + 0.20

Rated speed rpm : 325
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.15

Rated speed rpm : 900
guide sleeve
travel mm : 4.92
Tolerance mm : + 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.07

Tolerance mm : + 0.25

Rated speed rpm : 455
guide sleeve
travel mm : 2.52
Tolerance mm : + 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 2.93
Tolerance mm : + 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 10.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1460
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 3.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : + 0.05

E10

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 6.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 310
rack travel mm : 10.55
Tolerance mm : + 0.05

Pressure hPa : 130
rack travel mm : 7.85
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

rack travel mm : 11.85
Tolerance mm : + 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 2.5
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 861

Injection pump
Pump designation : PE6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQ325/1300PA1150
Governor no. : 0 421 801 716

Cust. part No. : 1284420/4

Customer-spec. information

Customer : DAF
Motor : NS156M
Power Kw : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1351
guide sleeve
travel mm : 6.37
Tolerance mm : ± 0.10

Rated speed rpm : 325
guide sleeve
travel mm : 1.99
Tolerance mm : ± 0.10

Rated speed rpm : 1300
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 427
guide sleeve
travel mm : 3.54

Tolerance mm : ± 0.10

Rated speed rpm : 590
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1570
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 650

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.85
Rated speed rpm : 1345
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : ± 15

Check
speed 1/min : + 20
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0
Setting point w/out bumper spring
Rated speed rpm : 225
CRT mm min. : > 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : + 0.10
rack travel mm : 2.00
Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : + 0.05
Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : + 0.05
Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : + 0.05
Rated speed rpm : 1000
rack travel mm : 12.85
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85

E14

Tolerance mm : + 0.05
Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 7.35
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : + 0.05
Pressure hPa : 200
rack travel mm : 8.55
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

rack travel mm : 11.85
Tolerance mm : + 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 873

Injection pump
Pump designation : PES6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQV325...1250PA1251
Governor no. : 0 421 814 164

Cust. part No. : 1305227

Customer-spec. information
Customer : DAF
Motor : NS177M
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.40

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTINGS OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1308
guide sleeve

travel mm : 10.40

Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve

travel mm : 1.25

Tolerance mm : ± 0.20

Rated speed rpm : 868
guide sleeve

travel mm : 5.45

Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve

travel mm : 3.02

Tolerance mm : ± 0.25

Rated speed rpm : 1510

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1360

Rack travel in mm : 11.25

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 123.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.25

Rated speed rpm : 1290

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1375

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : ± 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : ± 0.10

Rated speed rpm : 1250
rack travel mm : 12.25
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 7.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 600

E18

Pressure hPa : 430
rack travel mm : 10.90
Tolerance mm : ± 0.05

Pressure hPa : 220
rack travel mm : 7.85
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 12.25
Tolerance mm : ± 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 875

Injection pump
Pump designation : PES6P110A32ORS3329Z
EP type number : 0 412 016 744

Governor
Governor design. : RQV325...1250PA1251
Governor no. : 0 421 814 164

Cust. part No. : 1309376/0

Customer-spec. information
Customer : DAF
Motor : NS156M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

E20

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1298
guide sleeve
travel mm : 10.25
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.25
Tolerance mm : + 0.20

Rated speed rpm : 863
guide sleeve
travel mm : 5.41
Tolerance mm : + 0.25

Rated speed rpm : 520

guide sleeve
travel mm : 3.02
Tolerance mm : + 0.25

Rated speed rpm : 1510
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1370

Rack travel in mm : 10.85
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1300
Tolerance 1/min : + 5

Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : ± 0.10

Rated speed rpm : 1250
rack travel mm : 11.85
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 7.35
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : ± 0.05

Pressure hPa : 200
rack travel mm : 8.40
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 11.85
Tolerance mm : ± 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 876

Injection pump
Pump designation : PES6P110A320RS3329Y
EP type number : 0 412 016 756

Governor
Governor design. : RQV325...1250PA1251
Governor no. : 0 421 814 164

Cust. part No. : 1309375/0

Customer-spec. information
Customer : DAF
Motor : NS133M
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 160
Tolerance L/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1298
guide sleeve
travel mm : 10.25
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.25
Tolerance mm : ± 0.20

Rated speed rpm : 863
guide sleeve
travel mm : 5.41
Tolerance mm : ± 0.25

Rated speed rpm : 520

guide sleeve
travel mm : 3.02
Tolerance mm : ± 0.25

Rated speed rpm : 1510
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1370

Rack travel in mm : 10.85
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1285
Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : +- 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 76.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : +- 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : +- 0.10

Rated speed rpm : 1250
rack travel mm : 11.85
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : +- 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 6.50
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 310
rack travel mm : 10.55
Tolerance mm : +- 0.05

Pressure hPa : 130
rack travel mm : 7.85
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

rack travel mm : 11.85
Tolerance mm : +- 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.5

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 2.5
Check tolerance
cm³/1000S. : +- 5.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 881

Injection pump
Pump designation : PES6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQ325...1250PA1370
Governor no. : 0 421 801 828

Cust. part No. : 1305236

Customer-spec. information
Customer : DAF
Motor : NS177M
Power Kw : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 2.0

x inside diameter : 6.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 149.5

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : ± 0.10

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : ± 3.0

Check tolerance
cm3/1000S. : ± 6.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1292
guide sleeve
travel mm : 6.37
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.99
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 426

guide sleeve
travel mm : 3.48
Tolerance mm : ± 0.10

Rated speed rpm : 590
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 149.5
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.25
Rated speed rpm : 1290
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1370
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 415
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 1250
rack travel mm : 12.25
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 600

F02

Pressure hPa : -
rack travel mm : 7.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 430
rack travel mm : 10.90
Tolerance mm : + 0.05

Pressure hPa : 220
rack travel mm : 8.10
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.98
Test oil : ISO 4113

Combination No. : 0 402 076 821

Injection pump
Pump designation : PES6P120A720RS3340
EP type number : 0 412 026 773

Governor
Governor design. : RSV650...1050P8A566
 : -6
Governor no. : 0 421 833 615

Cust. part No. :

Customer-spec. information
Customer : NH
Motor : EP 040 B
Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking
Tolerance : + 0.10
Check
tolerance °NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 13.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 204.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025
Aneroid pressure
hPa : 1700

Del. quantity
cm³/1000 strokes : 204.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1067
rack travel mm : 12.30

Rated speed rpm : 1097
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance min : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1068
rack travel mm : 12.30

Rated speed rpm : 1098
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1069
rack travel mm : 12.30

Rated speed rpm : 1099

Tolerance 1/min : +- 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 1070
rack travel mm : 12.30

Rated speed rpm : 1100
Tolerance 1/min : +- 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 1071
rack travel mm : 12.30

Rated speed rpm : 1101
Tolerance 1/min : +- 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 1072
rack travel mm : 12.30

Rated speed rpm : 1102
Tolerance 1/min : +- 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

LOW IDLE

control lever
position degree : 74.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.20
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 4.70
Tolerance mm : +- 0.10

rack travel mm : 2.00

F05

Rated speed rpm : 720

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 13.35
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 14.00
Tolerance mm : +- 0.10

Rated speed rpm : 650
rack travel mm : 14.05
Tolerance mm : +- 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1700
rack travel mm : 14.00
Tolerance mm : +- 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.90
Tolerance mm : +- 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 980
rack travel mm : 12.25
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 14.05
Tolerance mm : ± 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 650
Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.98
Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : PSV400...1125POA694
Governor no. : 0 421 833 617

Cust. part No. : 51.11103-7606

Customer-spec. information

Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

F07

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.90
 Tolerance mm : ± 0.05

Del. quantity
 cm3/1000 strokes : 169.0

Tolerance
 cm3/1000 strokes : ± 1.0

Check tolerance
 cm3/1000S. : ± 4.0

Spread

Tolerance
 cm3/1000 strokes : 4.0

Check tolerance
 cm3/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.30
 Tolerance mm : ± 0.10

Del. quantity
 cm3/1000 strokes : 25.0

Tolerance
 cm3/1000 strokes : ± 3.0

Check tolerance
 cm3/1000S. : ± 6.0

Spread

Tolerance
 cm3/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
 Aneroid pressure
 hPa : 1500

Del. quantity
 cm3/1000 strokes : 169.0

Tolerance
 cm3/1000 strokes : ± 1.0

Check tolerance
 cm3/1000S. : ± 4.0

Spread

Tolerance
 cm3/1000 strokes : 4.0

Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 104.4
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.10
 Rated speed rpm : 1175
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : ± 15

rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1400

rack travel mm : 4.00
 Rated speed rpm : 1265
 Tolerance 1/min : ± 15

LOW IDLE

control lever
 position degree : 80.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 4.30
 Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 400
 rack travel mm : 4.80
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 500
 Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 925
 rack travel mm : 13.90
 Tolerance mm : + 0.05

Rated speed rpm : 1125
 rack travel mm : 13.10
 Tolerance mm : + 0.10

Rated speed rpm : 700
 rack travel mm : 14.00
 Tolerance mm : + 0.10

Rated speed rpm : 1000
 rack travel mm : 13.70
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 14.00
 Tolerance mm : + 0.10

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.50
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
 rack travel mm : 10.00
 Tolerance mm : + 0.05

Pressure hPa : 800
 rack travel mm : 13.20
 Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

F09

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1125
 Del. quantity
 cm³/1000 strokes : 146.5
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 700
 rack travel mm : 14.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 184.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 90.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 9.50
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 112.0
 Tolerance
 cm³/1000 strokes : + 10.0
 Check tolerance
 cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.80
 Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 402 646 649

Injection pump
Pump designation : PE6P130A720RS7339
EP type number : 0 412 636 833

Governor
Governor design. : RQV300...950PA905-1
Governor no. : 0 421 814 097

Cust. part No. :

Customer-spec. information
Customer : IVECO-AIFO
Motor : 8210.SRI
Power KW : 353.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 14.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 338.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 4.70
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 24.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 7.0

Spread

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
guide sleeve
travel mm : 7.75
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.81
Tolerance mm : + 0.20

Rated speed rpm : 409
guide sleeve
travel mm : 2.86
Tolerance mm : + 0.25

Rated speed rpm : 459
guide sleeve
travel mm : 3.29
Tolerance mm : + 0.25

Rated speed rpm : 720
guide sleeve
travel mm : 4.94
Tolerance mm : + 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1090

Rack travel in mm : 12.90
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 338.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.90
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 6.20

Testing:

Rated speed rpm : 300
rack travel mm : 4.70
Tolerance mm : ± 0.10

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.95
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 10.75
Tolerance mm : ± 0.10

Pressure hPa : 520
rack travel mm : 12.95
Tolerance mm : ± 0.05

Start interlock

F13

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 7.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.98
Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RGV275...1000FA1381K
Governor no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information
Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

F15

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.35
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve
travel mm : 7.47
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 820
guide sleeve
travel mm : 5.14
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.34
Tolerance mm : ± 0.25

Rated speed rpm : 1282
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1045
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 8.30

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.35
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.50
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 11.30
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500

rack travel mm : 11.85
Tolerance mm : ± 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : ± 0.10

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.98
Test oil : ISO 4113
Combination No. : 0 402 646 706
Injection pump
Pump designation : PE6P120A320LS7929
EP type number : 0 412 626 978

Governor
Governor design. : RG300/1050PA1395
Governor no. : 0 421 801 837

Cust. part No. : 0280745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM441LA - EURO I
Power KW : 218.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0- 60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 197.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

(B) SETTINGS OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108
guide sleeve
travel mm : 6.38
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.70
Tolerance mm : ± 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 415
guide sleeve
travel mm : 4.47
Tolerance mm : ± 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1158

Rack travel in mm : 11.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure

hPa : 1000

Del. quantity
cm³/1000 strokes : 197.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 92.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1100
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : ± 10

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 8.20
Testing:
Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10
rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.30
Tolerance mm : ± 0.10
Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : ± 0.20
Rated speed rpm : 1050
rack travel mm : 12.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.30
Tolerance mm : ± 0.10
Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 10.60
Tolerance mm : ± 0.05
Pressure hPa : 600
rack travel mm : 11.80
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.55
Tolerance mm : ± 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Speed
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 648 700

Injection pump
Pump designation : PE8P120A320LS7910
EP type number : 0 412 628 924

Governor
Governor design. : RQV350...1050PA1338
Governor no. : 0 421 814 192

Cust. part No. : 027 074 5302

Customer-spec. information

Customer : MB-NFZ
Motor : OM442A Euromot
Power Kw : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 265
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 194.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1107
guide sleeve
travel mm : 8.18
Tolerance mm : ± 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.02
Tolerance mm : ± 0.20

Rated speed rpm : 890
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.25

Rated speed rpm : 560

guide sleeve
travel mm : 3.60
Tolerance mm : ± 0.25

Rated speed rpm : 1197
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1290
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 1161

Rack travel in mm : 12.20
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 194.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.85
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 6.70

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 12.80
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 825
rack travel mm : 13.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 250
rack travel mm : 0.35
Tolerance mm : ± 0.05

Pressure hPa : 400

F25

rack travel mm : 1.75
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.15
tolerance mm : ± 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0

Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.98
Test oil : ISO 4113

Combination No. : 0 402 676 817

Injection pump
Pump designation : PE6P120A72ORS7188
: -10
EP type number : 0 412 626 924

Governor
Governor design. : RSV350...1050P1A543
: -3
Governor no. : 0 421 833 426

Cust. part No. : 1355270

Customer-spec. information

Customer : SCANIA
Motor : DS1166 A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 205
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity
cm³/1000 strokes : 212.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.70

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 6.00

CONTROL LEVER

control lever
position degree : 67.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.50

Rated speed rpm : 1095

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1170

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 81.0
tolerance degree : ± 4.0

control lever
position degree : 31.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 480
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.55
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.55
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 520
rack travel mm : 11.20
Tolerance mm : +- 0.15

Pressure hPa : 700
rack travel mm : 12.05
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.70
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 402 676 833

Injection pump
Pump designation : PE6P120A32ORS7426
EP type number : 0 412 626 958

Governor
Governor design. : RSV300...1100P1A650
Governor no. : 0 421 833 567

Cust. part No. : 3826502 P04 v.06/97

Customer-spec. information

Customer : PENTA
Motor : TWD 1031 VE
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 300
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.00
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 292.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 4.0

Spreed

Tolerance cm³/1000 strokes : 7.0

Check tolerance cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity cm³/1000 strokes : 22.0

Tolerance cm³/1000 strokes : ± 3.0

Check tolerance cm³/1000S. : ± 6.0

Spreed

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring pre-tension click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure hPa : 1500

Del. quantity cm³/1000 strokes : 292.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 4.0

Spreed

Tolerance cm³/1000 strokes : 7.0

Check tolerance cm³/1000S. : 11.0

CONTROL LEVER

control lever position degree : 55.0
tolerance degree : ± 4.0

control lever position degree : 107.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1080
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : +- 4.0

control lever
position degree : 23.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.10
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.00
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.00
Tolerance mm : +- 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.40
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 840
rack travel mm : 3.90
Tolerance mm : +- 0.20

Pressure hPa : 220
rack travel mm : 0.25
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 328.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 9.0
Check tolerance
cm³/1000S. : 13.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump
Pump designation : PES6P120A120RS7390
EP type number : 0 412 726 945

Governor
Governor design. : RQV350...1100PA1244K
Governor no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. L/h : 90
Tolerance L/h : + 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.70
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 173.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 18.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 5.0

Spread

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
guide sleeve
travel mm : 10.27
Tolerance mm : + 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.93
Tolerance mm : + 0.20

Rated speed rpm : 710
guide sleeve
travel mm : 5.79
Tolerance mm : + 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 4.28
Tolerance mm : + 0.25

Rated speed rpm : 1380
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1195

Rack travel in mm : 12.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 173.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 68.0
tolerance degree : + 4.0

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : + 15

Check
speed 1/min : + 20
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

control lever
position degree : 20.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.70
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 12.95
Tolerance mm : + 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : + 0.10

G08

Rated speed rpm : 700
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 700
Pressure hPa : 400
rack travel mm : 11.70
Tolerance mm : + 0.20

Pressure hPa : 600
rack travel mm : 13.30
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.95
Tolerance mm : + 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.5
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 746 606

Injection pump
Pump designation : PES6P110A720RS7406
EP type number : 0 412 716 810

Governor
Governor design. : RQV300...1050PA1090
: -1K
Governor no. : 0 421 815 497

Cust. part No. : 9279607

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 Ti-E
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

G10

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
guide sleeve
travel mm : 10.27
Tolerance mm : ± 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.86
Tolerance mm : ± 0.20

Rated speed rpm : 756
guide sleeve
travel mm : 6.17
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.75
Tolerance mm : ± 0.25

Rated speed rpm : 1330
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 12.80
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1090
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT. mm min. : > 7.40

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : +- 0.10

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.80
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : +- 0.15

Rated speed rpm : 800
Tolerance mm : +- 0.15

Rated speed rpm : 950
rack travel mm : 13.35
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 11.45
Tolerance mm : +- 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 13.80
Tolerance mm : +- 0.05

Rated speed rpm : 1050
Pressure hPa : -
Tolerance mm : +- 0.15

MEASUREMENT

Rated speed rpm : 1050
Pressure hPa : 940
rack travel mm : 13.00
Tolerance mm : +- 0.05

Pressure hPa : 670
rack travel mm : 11.50
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Tolerance mm : +- 0.15
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 182.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 746 606A

Injection pump
Pump designation : PES6P110A720RS7406
EP type number : 0 412 716 810

Governor
Governor design. : RQV300...1050PA1090
: -1K
Governor no. : 0 421 815 497

Cust. part No. : 9279608

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI-E A3
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1102
guide sleeve
travel mm : 10.05
Tolerance mm : ± 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.86
Tolerance mm : ± 0.20

Rated speed rpm : 749
guide sleeve
travel mm : 6.11
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.75
Tolerance mm : ± 0.25

Rated speed rpm : 1330
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

G15

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 12.80
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 1090
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : +- 0.10

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.80
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : +- 0.15

Rated speed rpm : 800
Tolerance mm : +- 0.15

Rated speed rpm : 950
rack travel mm : 13.35
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 11.45
Tolerance mm : +- 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 13.80
Tolerance mm : +- 0.05

Rated speed rpm : 1050
Pressure hPa : -
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 940
rack travel mm : 13.00
Tolerance mm : +- 0.05

Pressure hPa : 670
rack travel mm : 11.50
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Tolerance min : +- 0.15
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 182.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.07.98
Test oil : ISO 4113
Combination No. : 0 402 746 633
Injection pump
Pump designation : PES6P120A72ORS7366
EP type number : 0 412 726 933
Governor
Governor design. : RQ300/1050PA1344
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41R.7143
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 180
Tolerance l/h : ± 20.0
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.40
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.85
 Tolerance mm : +- 0.05

Del. quantity
 cm3/1000 strokes : 226.0

Tolerance
 cm3/1000 strokes : +- 1.0

Check tolerance
 cm3/1000S. : +- 4.0

Spread

Tolerance
 cm3/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.50
 Tolerance mm : +- 0.10
 Del. quantity
 cm3/1000 strokes : 20.0
 Tolerance
 cm3/1000 strokes : +- 3.0
 Check tolerance
 cm3/1000S. : +- 6.0
 Spread
 Tolerance
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 500

Rack travel in mm : 20.00
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 226.0
 Tolerance
 cm3/1000 strokes : +- 1.0
 Check tolerance
 cm3/1000S. : +- 4.0
 Spread
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 94.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.80
 Rated speed rpm : 1103
 Tolerance 1/min : +- 8
 Check
 speed 1/min : +- 13

rack travel mm : 4.00
 Rated speed rpm : 1180
 Tolerance 1/min : +- 15
 Check
 speed 1/min : +- 20

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
 rack travel mm : 6.50
 Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 395
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.35
Tolerance mm : + 0.10

Rated speed rpm : 850
rack travel mm : 12.80
Tolerance mm : + 0.20

Rated speed rpm : 950
rack travel mm : 12.25
Tolerance mm : + 0.20

Rated speed rpm : 500
rack travel mm : 13.70
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 13.35
Tolerance mm : + 0.10

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 260
rack travel mm : 10.70
Tolerance mm : + 0.20

Pressure hPa : 420
rack travel mm : 12.40
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

G20

Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
rack travel mm : 12.80
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.98
Test oil : ISO 4113

Combination No. : 0 400 678 040

Injection pump
Pump designation : PE8A95D410LS2608
EP type number : 0 410 698 988

Governor
Governor design. : RSV300...1325A8C1002
: L
Governor no. : 0 420 232 310

Cust. part No. :

Customer-spec. information

Customer : KHD
Motor : F8L413F
Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 8- 7- 2- 6
: - 5- 4- 3

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1325

Rack travel in mm : 9.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 92.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.5

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1325
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 92.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 8.70
Rated speed rpm : 1370
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1575

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : ± 30

Rated speed rpm : 700

CRT mm max. : < 1.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 700

TORQUE CONTROL

Rated speed rpm : 1325
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 5.5
Check tolerance
cm³/1000S. : \pm 8.5

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.98
Test oil : ISO 4113

Combination No. : 0 400 846 520

Injection pump
Pump designation : PES6A95D410LS2644
EP type number : 0 410 896 924

Governor
Governor design. : RQV250...1100AB1178L
Governor no. : 0 420 212 164

Cust. part No. :

Customer-spec. information

Customer : MAN
Motor : D2566 ME

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm³/1000 strokes : 125.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250
 Rack travel in mm : 7.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.0

(8) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1125
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 125.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 48.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 11.00

Rated speed rpm : 1145
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 12.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 8.50

Testing:

Rated speed rpm : 250
 rack travel mm : 7.00
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 370
 Tolerance 1/min : + 30

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 170
 Check
 speed 1/min : > 80
 Check
 speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 110.5

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.5

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 114.5
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.30
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 126.5
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.98
Test oil : ISO 4113

Combination No. : 0 401 078 002

Injection pump
Pump designation : PE8A100D32ORS3009
EP type number : 0 411 008 002

Governor
Governor design. : RSV300...1150A1C489R
Governor no. : 0 420 233 190

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D232-8

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 5- 4- 7
 : - 2- 3- 6

Phasing : 0-30-90-120-180
 : -210-270-300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 91.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0
RATED SPEED
rack travel mm : 8.50

H01

Rated speed rpm : 1175
Tolerance 1/min : + 5
rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : + 15
rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400
rack travel mm : 4.00

LOW IDLE

control lever
position degree : 25.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : + 0.10
rack travel mm : 2.00
Rated speed rpm : 515
Tolerance 1/min : + 30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.00
Tolerance mm : + 0.30

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.01.98
Test oil : ISO 4113

Combination No. : 0 402 036 762

Injection pump
Pump designation : PES6P110A120RS3353
EP type number : 0 412 016 752

Governor
Governor design. : RQV450...1100PA1233
 : -1K
Governor no. : 0 421 815 479

Cust. part No. : 3926776

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 194.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 13.00
Difference ° CS : 1.20

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.15
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 206.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500

Rack travel in mm : 6.00
Tolerance mm : +- 0.20

Del. quantity
cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1214
guide sleeve
travel mm : 8.09
Tolerance mm : +- 0.15

Rated speed rpm : 500
guide sleeve
travel mm : 1.82

H04

Tolerance mm : +- 0.25

Rated speed rpm : 890
guide sleeve
travel mm : 4.75
Tolerance mm : +- 0.25

Rated speed rpm : 1570
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 206.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : +- 6.0

RATED SPEED

rack travel mm : 11.45
Rated speed rpm : 1170
Tolerance 1/min : +- 15

rack travel mm : 7.95
Rated speed rpm : 1230
Tolerance 1/min : +- 5

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 6.0

Control Lever difference
Grad : 38.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 500
rack travel mm : 6.00
Tolerance mm : ± 0.20

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.55
Tolerance mm : ± 0.20

Rated speed rpm : 1100
rack travel mm : 12.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 10.15
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1000
Pressure hPa : 720
rack travel mm : 12.20
Tolerance mm : ± 0.30

Pressure hPa : 580
rack travel mm : 11.20
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 380

Check
speed 1/min : > 80
Check
speed 1/min : < 390

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 197.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : 1200
Rated speed rpm : 1100
rack travel mm : 12.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 190.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure

hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 22.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 069

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...1100A2C947R
Governor no. : F 002 A20 248

Cust. part No. : 3933623

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

H07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.25
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 113.5

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 500

Rack travel in mm : 5.85
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 21.5

Tolerance
 cm³/1000 strokes : + 2.0

Check tolerance
 cm³/1000S. : + 4.5

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1400

Del. quantity
 cm³/1000 strokes : 113.5

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 98.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.25
 Rated speed rpm : 1165
 Tolerance 1/min : + 5

Check
 speed 1/min : + 10

rack travel mm : 4.00
 Rated speed rpm : 1270
 Tolerance 1/min : + 5

Check
 speed 1/min : + 10

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1400

rack travel mm : 4.00
 Rated speed rpm : 1270
 Tolerance 1/min : + 15

Check
 speed 1/min : + 20

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

Control lever difference
Grad : 20.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.35
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.85
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.25
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 14.60
Tolerance mm : ± 0.10

Rated speed rpm : 1000
rack travel mm : 13.90
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.50
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 13.25
Tolerance mm : ± 0.20

Pressure hPa : 600
rack travel mm : 11.85
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

rack travel mm : 13.90
Tolerance mm : ± 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.85
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98
Test oil : ISO 4113

Combination No. : 0 402 648 708

Injection pump
Pump designation : PE8P120A320LS7927
EP type number : 0 412 628 934

Governor
Governor design. : RQ300/1050PA1389
Governor no. : 0 421 801 836

Cust. part No. :

Customer-spec. information

Customer : DHI
Motor : DV15TIS Euro II
Power KW : 310.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 229.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108
guide sleeve
travel mm : 6.35
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.31
Tolerance mm : ± 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 441
guide sleeve
travel mm : 3.98
Tolerance mm : ± 0.10

Rated speed rpm : 560

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1290
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 800

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 229.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : ± 4.0

control lever
position degree : 96.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 1102
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

control lever
position degree : 10.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 14.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1800
rack travel mm : 1.35
Tolerance mm : ± 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -4.15
Tolerance mm : ± 0.20

2-stage LDA setting

Rated speed rpm : 500
Pressure hPa : 800

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 600
rack travel mm : -0.95
Tolerance mm : ± 0.20

Pressure hPa : 300
rack travel mm : -3.05
Tolerance mm : ± 0.05

Pressure hPa : 1400
rack travel mm : 0.85
Tolerance mm : ± 0.10

Pressure hPa : 1200
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 205
Rated speed rpm : < 250

Check
speed 1/min : > 185
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 258.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : 1800
Rated speed rpm : 600
rack travel mm : 14.00

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 128.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.98
Test oil : ISO 4113

Combination No. : 0 402 678 836

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RSV550...105QPOA672
Governor no. : 0 421 833 591

Cust. part No. : 0270746402

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 225
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.60
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 270.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Spreed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0

Spreed

Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 270.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0

Spreed

Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 88.0
 tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
 Tolerance 1/min : ± 1
 rack travel mm : 14.60

Rated speed rpm : 1110
 Tolerance 1/min : ± 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1200

Rated speed rpm : 1071
 Tolerance 1/min : ± 1
 rack travel mm : 14.60

Rated speed rpm : 1111
 Tolerance 1/min : ± 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1200

Rated speed rpm : 1072
 Tolerance 1/min : ± 1
 rack travel mm : 14.60

Rated speed rpm : 1112
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1200

Rated speed rpm : 1073
Tolerance 1/min : + 1
rack travel mm : 14.60

Rated speed rpm : 1113
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1200

Rated speed rpm : 1074
Tolerance 1/min : + 1
rack travel mm : 14.60

Rated speed rpm : 1114
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1200

Rated speed rpm : 1175
Tolerance 1/min : + 1
rack travel mm : 14.60

Rated speed rpm : 1115
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

H17

Testing:

Rated speed rpm : 550
rack travel mm : 4.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 570
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 15.60
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 15.60
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 9.75
Tolerance mm : + 0.15

Rated speed rpm : 450
Pressure hPa : 1200
rack travel mm : 15.60
Tolerance mm : + 0.10

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 450

Pressure hPa : 600
rack travel mm : 12.20
Tolerance mm : + 0.15

Pressure hPa : 800
rack travel mm : 14.10
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 4.00
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.98
Test oil : ISO 4113

Combination No. : 0 402 678 837

Injection pump
Pump designation : PE8P12QA320LS7911
EP type number : 0 412 628 926

Governor
Governor design. : RSV550...1050POA679
Governor no. : 0 421 833 598

Cust. part No. : 027 074 6502

Customer-spec. information
Customer : MB-NFZ
Motor : OM442LA, Euro
Power kW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.40
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 227.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 227.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1085
Tolerance 1/min : + 1
rack travel mm : 13.50

Rated speed rpm : 1125
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1087
Tolerance 1/min : + 1
rack travel mm : 13.50

Rated speed rpm : 1127
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1089
Tolerance 1/min : + 1
rack travel mm : 13.50

Rated speed rpm : 1129
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1091
Tolerance 1/min : + 1
rack travel mm : 13.50

Rated speed rpm : 1131
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1093
Tolerance 1/min : + 1
rack travel mm : 13.50

Rated speed rpm : 1133
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1095
Tolerance 1/min : + 1
rack travel mm : 13.50

Rated speed rpm : 1135
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 550
rack travel mm : 4.20
Tolerance mm : + 0.10

H21

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.40
Tolerance mm : + 0.05

Rated speed rpm : 600
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1100
rack travel mm : 15.00
Tolerance mm : + 0.10

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 11.10
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 450
Pressure hPa : 750
rack travel mm : 14.30
Tolerance mm : + 0.20

Pressure hPa : 550
rack travel mm : 12.50
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 248.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 4.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.98
Test oil : ISO 4113

Combination No. : 0 402 678 839

Injection pump
Pump designation : PE8P120A320LS7912
EP type number : 0 412 628 927

Governor
Governor design. : RSV550...1050POA681
Governor no. : 0 421 833 600

Cust. part No. : 028 074 2802

Customer-spec. information
Customer : MB-NFZ
Motor : OM402LA, Euro
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
Tolerance 1/min : + 1
rack travel mm : 12.70

Rated speed rpm : 1110
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1071
Tolerance 1/min : + 1
rack travel mm : 12.70

Rated speed rpm : 1111
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1072
Tolerance 1/min : + 1
rack travel mm : 12.70

Rated speed rpm : 1112
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : +- 0.55
Rated speed rpm : 1300

Rated speed rpm : 1073
Tolerance 1/min : +- 1
rack travel mm : 12.70

Rated speed rpm : 1113
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.35
Tolerance mm : +- 0.55
Rated speed rpm : 1300

Rated speed rpm : 1074
Tolerance 1/min : +- 1
rack travel mm : 12.70

Rated speed rpm : 1114
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

Rated speed rpm : 1075
Tolerance 1/min : +- 1
rack travel mm : 12.70

Rated speed rpm : 1115
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.10

H25

Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : +- 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 13.70
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 14.70
Tolerance mm : +- 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : +- 0.15

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 12.40
Tolerance mm : +- 0.15

MEASUREMENT

Rated speed rpm : 450

Pressure hPa : 750
rack travel mm : 14.00
Tolerance mm : +- 0.15

Pressure hPa : 650
rack travel mm : 13.40
Tolerance mm : +- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.20
Tolerance mm : ± 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 4.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113

Combination No. : 0 402 646 781

Injection pump
Pump designation : PE6P120A320LS7854
EP type number : 0 412 626 872

Governor
Governor design. : RQV350...950PA1118
Governor no. : 0 421 814 081

Cust. part No. : 0250742002

Customer-spec. information

Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 14.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1010
guide sleeve

travel mm : 9.49
Tolerance mm : ± 0.15

Rated speed rpm : 350
guide sleeve

travel mm : 1.22
Tolerance mm : ± 0.20

Rated speed rpm : 403
guide sleeve

travel mm : 1.97
Tolerance mm : ± 0.25

Rated speed rpm : 453
guide sleeve

travel mm : 2.56

Tolerance mm : ± 0.25

Rated speed rpm : 720
guide sleeve

travel mm : 4.94
Tolerance mm : ± 0.25

Rated speed rpm : 1210
guide sleeve

travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1080

Rack travel in mm : 13.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 103.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 995

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1075

Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 9.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 14.50
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 14.50
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 10.25
Tolerance mm : ± 0.15

Rated speed rpm : 500
Pressure hPa : -

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 1.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.60
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 10.0

Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.40

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97
Test oil : ISO 4113

Combination No. : 0 402 648 780

Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0 412 628 877

Governor
Governor design. : RQV300...1050PA1078
 : -2K
Governor no. : 0 421 815 548

Cust. part No. : 988 04 47

Customer-spec. information

Customer : LIEBHERR
Motor : D 9408 TI-EA3
Power KW : 420.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 230
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

J03

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 295.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
guide sleeve

travel mm : 10.27
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve

travel mm : 1.11
Tolerance mm : + 0.20

Rated speed rpm : 755
guide sleeve

travel mm : 6.17
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve

travel mm : 3.75
Tolerance mm : + 0.25

Rated speed rpm : 1330
guide sleeve

travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 12.50
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure

hPa : 1600
Del. quantity

cm³/1000 strokes : 295.0
Tolerance

cm³/1000 strokes : + 1.0
Check tolerance

cm³/1000S. : + 4.0
Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.65
Rated speed rpm : 1110

Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1200

Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : +- 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.65
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : +- 0.10

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : +- 0.10

Rated speed rpm : 950
rack travel mm : 12.20
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 10.80
Tolerance mm : +- 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 12.65
Tolerance mm : +- 0.05

Rated speed rpm : 1050
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1050
Pressure hPa : 1050
rack travel mm : 11.80

Tolerance mm : +- 0.05

Pressure hPa : 700
rack travel mm : 9.50
Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 276.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 299.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97
Test oil : ISO 4113

Combination No. : 0 402 648 780A

Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0 412 628 877

Governor
Governor design. : RQV3CU...10S0PA1078
 : -2K
Governor no. : 0 421 815 548

Cust. part No. : 988 04 47

Customer-spec. information
Customer : LIEBHERR
Motor : D 9/03 TI-EA3
Power KW : 420.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 295.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.50
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 30.0
 Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
 guide sleeve
 travel mm : 10.27
 Tolerance mm : + 0.15

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.11
 Tolerance mm : + 0.20

Rated speed rpm : 755
 guide sleeve
 travel mm : 6.17
 Tolerance mm : + 0.25

Rated speed rpm : 480
 guide sleeve
 travel mm : 3.75
 Tolerance mm : + 0.25

Rated speed rpm : 1330
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1182

Rack travel in mm : 12.48
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1600

Del. quantity
 cm³/1000 strokes : 295.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 121.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.65
 Rated speed rpm : 1110
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1200
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 12.20
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 10.80
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 1050
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 1050
rack travel mm : 11.80
Tolerance mm : ± 0.05

Pressure hPa : 700
rack travel mm : 9.50

Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 276.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 299.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LCW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97
Test oil : ISO 4113

Combination No. : 0 402 648 967

Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0 412 628 877

Governor
Governor design. : RQV300...1050PA1078
 : -1K
Governor no. : 0 421 815 361

Cust. part No. : 9275447

Customer-spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 30.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
 guide sleeve
 travel mm : 10.38
 Tolerance mm : + 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.69
 Tolerance mm : + 0.25

Rated speed rpm : 746
 guide sleeve
 travel mm : 6.20
 Tolerance mm : + 0.25

Rated speed rpm : 353
 guide sleeve
 travel mm : 2.45
 Tolerance mm : + 0.25

Rated speed rpm : 403
 guide sleeve
 travel mm : 3.18
 Tolerance mm : + 0.25

Rated speed rpm : 450
 guide sleeve
 travel mm : 3.66

Tolerance mm : + 0.25

Rated speed rpm : 1320
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1185

Rack travel in mm : 10.80
 Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1600
 Del. quantity
 cm³/1000 strokes : 300.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.75
 Rated speed rpm : 1110
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1200
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.50
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 10.50
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.40
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 12.60
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1600
rack travel mm : 10.50
Tolerance mm : ± 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.15

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 675
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 575
rack travel mm : 9.75
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 298.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 10.50
Tolerance mm : ± 0.10

Aneroid pressure
hPa : 1600
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 299.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 242.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.15
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97
Test oil : ISO 4113
Combination No. : 0 402 648 967A
Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0 412 628 877
Governor
Governor design. : RQV300...1050PA1078
 : -1K
Governor no. : 0 421 815 361
Cust. part No. : 9275448

Customer-spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 12.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance

cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117

guide sleeve

travel mm : 10.38

Tolerance mm : ± 0.25

Rated speed rpm : 300

guide sleeve

travel mm : 1.69

Tolerance mm : ± 0.25

Rated speed rpm : 746

guide sleeve

travel mm : 6.20

Tolerance mm : ± 0.25

Rated speed rpm : 353

guide sleeve

travel mm : 2.45

Tolerance mm : ± 0.25

Rated speed rpm : 403

guide sleeve

travel mm : 3.18

Tolerance mm : ± 0.25

Rated speed rpm : 450

guide sleeve

travel mm : 3.66

Tolerance mm : ± 0.25

Rated speed rpm : 1320

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1185

Rack travel in mm : 10.80

Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure

hPa : 1600

Del. quantity

cm³/1000 strokes : 300.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 119.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.75

Rated speed rpm : 1110

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1200

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.50
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 10.50
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.40
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 12.60
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1600
rack travel mm : 10.50
Tolerance mm : ± 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.15

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 675
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 575
rack travel mm : 9.75
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 298.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 10.50
Tolerance mm : ± 0.10

Aneroid pressure
hPa : 1600
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 299.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 242.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.15
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97
Test oil : ISO 4113

Combination No. : 0 402 676 825

Injection pump
Pump designation : PE6P120A320RS7430
EP type number : 0 412 626 960

Governor
Governor design. : RSV300...850P1A614
Governor no. : 0 421 833 502

Cust. part No. : 11031231 P06 v.08/97

Customer-spec. information

Customer : VCE
Motor : TD 103 KAF
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 300
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.20
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 306.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.20
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 34.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 306.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : + 4.0

control lever
position degree : 102.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 875
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 950
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

control lever
position degree : 26.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 3.70
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 570
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 12.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.20
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.35
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 575
rack travel mm : 2.35
Tolerance mm : ± 0.20

Pressure hPa : 180
rack travel mm : 0.25
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

rack travel mm : 12.00
Tolerance mm : ± 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.97
Test oil : ISO 4113

Combination No. : 0 402 575 827

Injection pump
Pump designation : PE6P110A32ORS7408
EP type number : 0 412 616 800

Governor
Governor design. : RSV300...850P1A623
Governor no. : 0 421 833 530

Cust. part No. : 11030178 P04 v.08/97

Customer-spec. information

Customer : VCE
Motor : TD 73 KHE
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 210
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 20.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.90
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 181.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 3.50
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 181.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : +- 4.0

control lever
position degree : 104.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 8.90
Rated speed rpm : 895
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 955
Tolerance 1/min : +- 10

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 80.0
tolerance degree : +- 4.0

control lever
position degree : 30.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 3.00
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 385
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.90
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 9.90
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 6.80
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 640
rack travel mm : 2.70
Tolerance mm : ± 0.20

Pressure hPa : 100
rack travel mm : 0.25
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 3.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.97
Test oil : ISO 4113

Combination No. : 0 402 676 834

Injection pump
Pump designation : PE6P110A320RS7429
EP type number : 0 412 616 801

Governor
Governor design. : RSV300...850P1A623
Governor no. : 0 421 833 530

Cust. part No. : 11030715 P04 v.08.97

Customer-spec. information
Customer : VCE
Motor : TD 73 KHE
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 210
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.20
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 181.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 7.0

Check tolerance
 cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 5.40
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 26.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 181.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Speed
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 11.0

CONTROL LEVER

control lever
 position degree : 47.0
 tolerance degree : ± 4.0

control lever
 position degree : 97.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.20
 Rated speed rpm : 895
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 960
 Tolerance 1/min : ± 15

rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1100

rack travel mm : 4.00
 Rated speed rpm : 980
 Tolerance 1/min : ± 15

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : ± 4.0

control lever
 position degree : 23.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 9.40

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 455
Tolerance 1/min : \pm 30

TOPQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 3.20
Tolerance mm : \pm 0.20

Pressure hPa : 100
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.09.97
Test oil : ISO 4113
Combination No. : 0 402 746 995
Injection pump
Pump designation : PES6P120A32ORS7343
EP type number : 0 412 726 915
Governor
Governor design. : RQV300...1000PA1160K
Governor no. : 0 421 815 420
Cust. part No. : CCEP 5144A 66-232

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062356 A/41
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 071
Inlet press. bar : 2.5
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

K01

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 11.00
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
°NW after s.o.d. : -0.40
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1
Beginning of delivery differende
betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 350.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1103
guide sleeve
travel mm : 8.70
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.32

K02

Tolerance mm : ± 0.25

Rated speed rpm : 823
guide sleeve
travel mm : 5.92
Tolerance mm : ± 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.43
Tolerance mm : ± 0.25

Rated speed rpm : 455
guide sleeve
travel mm : 2.98
Tolerance mm : ± 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.66
Tolerance mm : ± 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1300

Rack travel in mm : 11.60
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 350.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1100
Tolerance 1/min : ± 5

rack travel mm : -8.80
Rated speed rpm : 1210
Tolerance 1/min : ± 15

rack travel mm : -12.30
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.70
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm max. : < -6.70

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600
rack travel mm : -0.45
Tolerance mm : ± 0.15

Rated speed rpm : 800
rack travel mm : 0.10
Tolerance mm : ± 0.15

Rated speed rpm : 350
rack travel mm : -1.70
Tolerance mm : ± 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : -3.90
Tolerance mm : ± 0.30

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 320
rack travel mm : -2.80
Tolerance mm : ± 0.15

Pressure hPa : 520
rack travel mm : -1.70
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 225

Check
speed 1/min : > 80
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 381.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 0.10
Tolerance mm : ± 0.15

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : -7.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.98
Test oil : ISO 4113

Combination No. : E 040 101 200

Injection pump
Pump designation : PES6A100D320/3RS3506
EP type number : 9 410 037 236

Governor
Governor design. : RQV400...1250AB1328R
Governor no. : 0 042 096 600

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 125 ps

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 3.60
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 5.75
Tolerance : +- 0.10
Check
tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.00
Tolerance mm : +- 0.05

Rack travel in mm : 6.40
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 1300
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1490

LOW IDLE

Testing:

Rated speed rpm : 400
rack travel mm : 6.40
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.00
Tolerance mm : ± 0.05

Rated speed rpm : 550
rack travel mm : 10.30
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 10.30
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 170
Rated speed rpm : > 300

Check
speed 1/min : < 190
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.30
Tolerance mm : ± 0.15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.40
Tolerance mm : ± 0.50

LOW IDLE

Rack travel in mm : 6.40
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.07.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 109

Injection pump
Pump designation : PES6A95D12ORS2916
EP type number : F 002 A10 010

Governor
Governor design. : RSV425...1050A0C982R
Governor no. : F 002 A20 257

Cust. part No. : 328 4544

Customer-spec. information
Customer : CUMMINS
Motor : 68T
Power KW : 105.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

K07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm3/1000 strokes :	94.3
<hr/>	
Tolerance	
cm3/1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm3/1000S. :	+ 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm3/1000 strokes :	4.0
<hr/>	
Check tolerance	
cm3/1000S. :	6.0
<hr/>	

Rated speed rpm : 425

Rack travel in mm :	5.05
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	18.5
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	6.0
Check tolerance	
cm3/1000S. :	8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	FREE
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

K08

Aneroid pressure	
hPa :	900
Del. quantity	
cm3/1000 strokes :	94.3
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	4.0
Check tolerance	
cm3/1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	95.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.05
Rated speed rpm :	1120
Tolerance 1/min :	+ 5

rack travel mm :	4.50
Rated speed rpm :	1175
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1300

rack travel mm :	4.50
Rated speed rpm :	1175
Tolerance 1/min :	+ 15

LOW IDLE

control lever	
position degree :	76.0
tolerance degree :	+ 4.0

Control lever difference	
Grad :	19.0
tolerance degree :	+ 6.0

Setting point w/out bumper spring

Rated speed rpm :	425
rack travel mm :	4.05
Tolerance mm :	+ 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.05
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.05
Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 11.70
Tolerance mm : +- 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 650
rack travel mm : 11.40
Tolerance mm : +- 0.20

Pressure hPa : 400
rack travel mm : 10.60
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 105.0

K09

Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 85.1
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm3/1000 strokes : 121.5
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000S. : +- 15.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 5.05
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 18.5
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.5
Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.98
Test oil : ISO 4113

Combination No. : 0 402 040 700

Injection pump
Pump designation : PES12P120A920RS3335
EP type number : 0 412 020 701

Governor
Governor design. : RGV350...1400PA1145
Governor no. : 0 421 814 092

Cust. part No. :

Customer-spec. information
Customer : FINCANTIERI
Motor : 1312 T2

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

K10

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-12- 9- 4- 5
 : - 8- 11- 2- 3
 : - 10- 7- 6

Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 15.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 288.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
 cm³/1000 strokes : 7.0

Check tolerance
 cm³/1000S. : 11.0

Rated speed rpm : 350

Rack travel in mm : 8.10
 Tolerance mm : +- 0.10

Del. quantity
 cm³/1000 strokes : 39.0
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0

Speed
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1415
 guide sleeve
 travel mm : 8.40
 Tolerance mm : +- 0.15

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.63
 Tolerance mm : +- 0.20

Rated speed rpm : 910
 guide sleeve
 travel mm : 5.33
 Tolerance mm : +- 0.25

Rated speed rpm : 394
 guide sleeve
 travel mm : 2.38
 Tolerance mm : +- 0.25

Rated speed rpm : 444
 guide sleeve
 travel mm : 2.95
 Tolerance mm : +- 0.25

Rated speed rpm : 520
 guide sleeve
 travel mm : 3.49
 Tolerance mm : +- 0.25

Rated speed rpm : 1740
 guide sleeve
 travel mm : 11.50
 Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1490

Rack travel in mm : 14.30
 Tolerance mm : +- 1.30

CONTROL LEVER

control lever
 position degree : 117.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.30
 Rated speed rpm : 1395
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1630
 Tolerance 1/min : +- 15

rack travel mm : 1.00
 Tolerance mm : +- 0.70
 Rated speed rpm : 1750

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
 CRT mm min. : > 9.60

Testing:

Rated speed rpm : 350
 rack travel mm : 8.10
 Tolerance mm : +- 0.10

Rated speed rpm : 525

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 15.30
Tolerance mm : ± 0.05

Rated speed rpm : 1350
rack travel mm : 15.30
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 15.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 400
rack travel mm : 12.00
Tolerance mm : ± 0.20

Pressure hPa : 500
rack travel mm : 13.75
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1350
Del. quantity
cm³/1000 strokes : 278.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

K12

Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 420.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 8.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113
Combination No. : 0 402 046 883
Injection pump
Pump designation : PES6P120A1320/5LS339
: 9
EP type number : 0 412 026 808
Governor
Governor design. : RQ750PA1387
Governor no. : 0 421 801 834
Cust. part No. : 1409259

Customer-spec. information
Customer : SCANIA
Motor : DSC12 40A

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 2.5
Tolerance bar : + 0.1
Tolerance l/h : + 20.0
Test nozzle holde
assembly : 1 688 901 104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

K13

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 20.50
Tolerance mm : + 0.50
Firing order : 1- 4- 2- 6- 3-
: 5
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Start of delivery blocking
Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700
Tolerance mm : + 0.05
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 8.0

Spreed _____

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Tolerance mm : ± 0.10

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : 1500

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 8.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 26.0
tolerance degree : ± 4.0

control lever
position degree : 88.0
tolerance degree : ± 4.0

RATED SPEED

Rated speed rpm : 750
Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 775

Tolerance 1/min : ± 15

Check

speed 1/min : ± 20

Tolerance mm : ± 0.50

Rated speed rpm : 850

LOW IDLE

Setting point w/out bumper spring

CRT mm min. : > 1.50

Testing:

Rated speed rpm : 250

Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700

Tolerance mm : ± 0.05

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : -

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350

Tolerance mm : ± 0.15

Pressure hPa : 750

Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Tolerance mm : ± 0.10
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.98
Test oil : ISO 4113

Combination No. : 0 402 076 822

Injection pump
Pump designation : PES6P110A32ORS3400
EP type number : 0 412 016 759

Governor
Governor design. : RSV300...1000P1A695
Governor no. : 0 421 833 618

Cust. part No. : 11032943 v. 25.02.98

Customer-spec. information
Customer : VCE

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 9.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

K17

Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1022
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1075
Tolerance 1/min : ± 10

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 77.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 9.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : ± 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00
Tolerance mm : ± 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1500
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 700
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 700

Pressure hPa : 660
rack travel mm : 2.00
Tolerance mm : \pm 0.20

Pressure hPa : 130
rack travel mm : 0.25
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 9.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.07.98
Test oil : ISO 4113

Combination No. : 0 402 630 814

Injection pump
Pump designation : PE12P130A120LS7338
EP type number : 0 412 630 805

Governor
Governor design. : RQV300...825PA1152
Governor no. : 0 421 814 095

Cust. part No. : 4.030.377.3

Customer spec. information
Customer : SACM
Motor : UD25.V12
Power KW : 1050.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1; 3.2

Test oil inlet temp. °C : 43
Tolerance °C : ± 2.5

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder assembly : 0 681 443 022

Opening pressure bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 060

Outside diameter : 8.0

x inside diameter : 4.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 5- 10- 3
: - 7- 6- 11
: - 2- 9- 4
: - 12

Phasing : 0-37.5-60-97.5-120
: -157.5-180-217.5
: -240-277.5-300
: -337.5
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 825

Rack travel in mm : 12.00
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 450.5

Tolerance
 cm³/1000 strokes : + 1.5

Check tolerance
 cm³/1000S. : + 5.0

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 5.00
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 60.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 7.0

Spread

Tolerance
 cm³/1000 strokes : 10.0

Check tolerance
 cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 890
 guide sleeve
 travel mm : 7.85
 Tolerance mm : + 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.84
 Tolerance mm : + 0.25

Rated speed rpm : 339
 guide sleeve
 travel mm : 2.61
 Tolerance mm : + 0.25

K20

Rated speed rpm : 389
 guide sleeve
 travel mm : 3.29
 Tolerance mm : + 0.25

Rated speed rpm : 620
 guide sleeve
 travel mm : 4.83
 Tolerance mm : + 0.25

Rated speed rpm : 1130
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 980

Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 825
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 450.5

Tolerance
 cm³/1000 strokes : + 1.5

Check tolerance
 cm³/1000S. : + 5.0

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 10.0

CONTROL LEVER

control lever
 position degree : 120.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.00
 Rated speed rpm : 875
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 950

Tolerance 1/min : + 15
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1060

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 825
rack travel mm : 12.00
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : > 220

Check
speed 1/min : > 80
Check
speed 1/min : > 240

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.00
Tolerance mm : + 0.10

K21

Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 7.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.07.98
Test oil : ISO 4113
Combination No. : 0 402 646 664
Injection pump
Pump designation : PE6P120A320LS7401
EP type number : 0 412 626 950
Governor
Governor design. : RQV325...1000PA1256K
Governor no. : 0 421 815 493

Cust. part No. :

Customer-spec. information
Customer : LIAZ
Motor : ML636E
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder assembly : 1 688 901 105
Opening pressure bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.80
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 13.80
Tolerance mm : ± 0.05
Del. quantity cm³/1000 strokes : 215.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0
Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.40
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 38.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
 guide sleeve
 travel mm : 9.78
 Tolerance mm : + 0.15

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.47
 Tolerance mm : + 0.20

Rated speed rpm : 831
 guide sleeve
 travel mm : 6.95
 Tolerance mm : + 0.25

Rated speed rpm : 550
 guide sleeve
 travel mm : 3.76
 Tolerance mm : + 0.25

Rated speed rpm : 1290
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140

Rack travel in mm : 12.80
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 215.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 12.80
 Rated speed rpm : 1045
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1145
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : ± 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.80
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.45
Tolerance mm : ± 0.20

Rated speed rpm : 600
rack travel mm : 12.85
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500
rack travel mm : 13.80
Tolerance mm : ± 0.05

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 11.15
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
Pressure hPa : 260
rack travel mm : 11.70
Tolerance mm : ± 0.20

Pressure hPa : 370
rack travel mm : 13.20

Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 255

Check
speed 1/min : > 80
Check
speed 1/min : < 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

rack travel mm : 12.85
Tolerance mm : ± 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 191.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.98
Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278K
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF
Motor : XF 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1077
guide sleeve
travel mm : 10.24
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : + 0.20

Rated speed rpm : 704
guide sleeve
travel mm : 6.53
Tolerance mm : + 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1158

Rack travel in mm : 12.00
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.40
Rated speed rpm : 1040
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 980
rack travel mm : 13.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.55
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 342.0
Tolerance

cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.05
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.98
Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump
Pump designation : PE6P120A32ORS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278
: -1K
Governor no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information
Customer : DAF
Motor : XF 280 M
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

L02

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 303.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed:

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1062
guide sleeve
travel mm : 10.04
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 697
guide sleeve
travel mm : 6.48
Tolerance mm : \pm 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1171

Rack travel in mm : 10.70
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 303.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.35
Rated speed rpm : 1050
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 7.80

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Rated speed rpm : 980
rack travel mm : 12.35
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

L04

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 170
rack travel mm : 9.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.60
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.07.98
Test oil : ISO 4113

Combination No. : 0 402 648 603

Injection pump
Pump designation : PE8P120A720LS7427T
EP type number : 0 412 628 919

Governor
Governor design. : RQ750PA1227-1
Governor no. : 0 421 801 812

Cust. part No. : 1391886

Customer-spec. information
Customer : SCANIA
Motor : DSI(C)14...A,M

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration damper
(RoBo diaphragm) : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-2A- 7- 3A- 4
 : - 5A- 6

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.45
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 324.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 10.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
<hr/>	

Rack travel in mm	: 6.50
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 38.0
Tolerance	
cm ³ /1000 strokes	: ± 4.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 759
guide sleeve	
travel mm	: 4.86
Tolerance mm	: ± 0.15
Rated speed rpm	: 797
guide sleeve	
travel mm	: 10.00
Tolerance mm	: ± 0.25
Rated speed rpm	: 850
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm ³ /1000 strokes	: 324.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 10.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 28.0
tolerance degree	: ± 4.0
control lever	
position degree	: 89.0
tolerance degree	: ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 750
rack travel mm	: 15.50
Rated speed rpm	: 785
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 850

Rated speed rpm	: 751
rack travel mm	: 15.50
Rated speed rpm	: 786
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 850

Rated speed rpm	: 752
rack travel mm	: 15.50
Rated speed rpm	: 787
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.50

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.50

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.50

Rated speed rpm : 790
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.45
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.45
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 13.60
Tolerance mm : + 0.20

Pressure hPa : 680
rack travel mm : 15.05
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.98
Test oil : ISO 4113

Combination No. : 0 402 648 817

Injection pump
Pump designation : PE8P120A320LS7801
: -10
EP type number : 0 412 628 851

Governor
Governor design. : RQ300/1050PA762-16
Governor no. : 0 421 801 620

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 A
Power KW : 269.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity
cm3/1000 strokes : 205.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : +- 0.20

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1050
guide sleeve

travel mm : 6.80

Tolerance mm : +- 0.10

Rated speed rpm : 300
guide sleeve

travel mm : 2.30

Tolerance mm : +- 0.10

guide sleeve
travel mm : 6.00

Tolerance mm : +- 0.10

Rated speed rpm : 870
guide sleeve

travel mm : 6.20

Tolerance mm : +- 0.10

Rated speed rpm : 1170
guide sleeve

travel mm : 9.50

Tolerance mm : +- 0.30

GUIDE SLEEVE POSITION

control lever

position degree : 109

Rated speed rpm : 600

Rack travel in mm : 20.00

Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500

Aneroid pressure

hPa : 1050

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever

position degree : 97.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.70

Rated speed rpm : 1103

Tolerance 1/min : +- 8

rack travel mm : 4.00

Rated speed rpm : 1185

Tolerance 1/min : +- 15

rack travel mm : 0.75

Tolerance mm : +- 0.75

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 74.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.20

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : ± 20

TORQUE CONTROL

Dimension a mm : 0.75

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : -

Rated speed rpm : 600
Pressure hPa : 300
rack travel mm : 1.00
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 400
rack travel mm : 2.05
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1050
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 179.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

rack travel mm : 14.10
Tolerance mm : ± 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 182.5
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 11.5

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 014

Injection pump
Pump designation : PES6P120A720LS8037
EP type number : 0 412 926 024

Governor
Governor design. : RQV250...1050PA1236K
Governor no. : 0 421 815 970

Cust. part No. : 1370101

Customer-spec. information
Customer : SCANIA
Motor : DSC1202

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 85
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 180.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 775

Rack travel in mm : 14.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 330.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 10.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 250

Rack travel in mm : 4.60
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1116
guide sleeve
travel mm : 10.09
Tolerance mm : + 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.79
Tolerance mm : + 0.20

Rated speed rpm : 644
guide sleeve
travel mm : 4.47

Tolerance mm : + 0.25

Rated speed rpm : 290
guide sleeve
travel mm : 2.62
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1170

Rack travel in mm : 12.10
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 775
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 330.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 10.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : + 4.0

control lever
position degree : 121.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1095

Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : > 7.30

Testing:

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : + 0.30

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 775
rack travel mm : 14.05
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 13.05
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 13.10
Tolerance mm : + 0.10

Rated speed rpm : 675
rack travel mm : 13.30
Tolerance mm : + 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 14.05
Tolerance mm : + 0.10

Rated speed rpm : 775
Pressure hPa : =
rack travel mm : 8.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : 300
rack travel mm : 9.80
Tolerance mm : + 0.15

Pressure hPa : 610
rack travel mm : 11.50
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 319.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 10.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
rack travel mm : 13.10

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 675
Del. quantity
cm³/1000 strokes : 323.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 192.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

L16

Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 015

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
Governor no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information
Customer : SCANIA
Motor : DSC 913

TEST BENCH REQUIREMENTS

Inlet line : EHPB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 8.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 7.89
Tolerance mm : +- 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : +- 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : +- 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : +- 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 8.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : +- 4.0

control lever
position degree : 120.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : ± 4.0

control lever
position degree : 25.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : > 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 11.15

Tolerance mm : ± 0.15

Pressure hPa : 750
rack travel mm : 12.15
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : < 190
Rated speed rpm : > 150

Check
speed 1/min : < 210
Check
speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 016

Injection pump
Pump designation : PES6P12QA32ORS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
: -1
Governor no. : 0 421 814 158

Cust. part No. : 1369528

Customer-spec. information
Customer : SCANIA
Motor : DSC 912

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70
 Tolerance mm : + 0.05

 Del. quantity
 cm³/1000 strokes : 292.0

 Tolerance
 cm³/1000 strokes : + 1.0

 Check tolerance
 cm³/1000S. : + 9.0

 Spreed

 Tolerance
 cm³/1000 strokes : 8.0

 Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 250

 Rack travel in mm : 7.60
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 40.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
 guide sleeve
 travel mm : 7.89
 Tolerance mm : + 0.15

 Rated speed rpm : 250
 guide sleeve
 travel mm : 1.33
 Tolerance mm : + 0.20

 Rated speed rpm : 748
 guide sleeve
 travel mm : 6.17
 Tolerance mm : + 0.25

Rated speed rpm : 470
 guide sleeve
 travel mm : 4.09
 Tolerance mm : + 0.25

 Rated speed rpm : 1470
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 292.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 9.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 57.0
 tolerance degree : + 4.0

 control lever
 position degree : 120.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70
 Rated speed rpm : 1045
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10

 rack travel mm : 4.00
 Rated speed rpm : 1235
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : ± 4.0

control lever
position degree : 25.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.70

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.70
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 11.30

L23

Tolerance mm : ± 0.15

Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 150
Rated speed rpm : < 190

Check
speed 1/min : > 130

Check
speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 288.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 017

Injection pump
Pump designation : PES6P120A720RS8039
EP type number : U 412 926 U26

Governor
Governor design. : RQV250...950PA1243
Governor no. : 0 421 814 162

Cust. part No. : 1374808

Customer-spec. information
Customer : SCANIA
Motor : DSC 11.79

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1008
guide sleeve

travel mm : 8.61
Tolerance mm : ± 0.15

Rated speed rpm : 250
guide sleeve

travel mm : 1.33
Tolerance mm : ± 0.20

Rated speed rpm : 732
guide sleeve

travel mm : 6.35
Tolerance mm : ± 0.25

Rated speed rpm : 470
guide sleeve

travel mm : 4.09
Tolerance mm : ± 0.25

Rated speed rpm : 1260
guide sleeve

travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1165

Rack travel in mm : 10.90
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1500
Del. quantity

cm³/1000 strokes : 298.0
Tolerance

cm³/1000 strokes : ± 1.0
Check tolerance

cm³/1000S. : ± 9.0
Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 55.0

tolerance degree : ± 4.0

control lever
position degree : 119.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 995

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1115
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 81.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRF mm min. : > 7.90

Testing:

Rated speed rpm : 250
rack travel mm : 5.60
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 11.90
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 500

L27

Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 10.30
Tolerance mm : ± 0.15

Pressure hPa : 600
rack travel mm : 11.40
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 282.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50

Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 018

Injection pump
Pump designation : PES6P120A72ORS8041
EP type number : 0 412 926 027

Governor
Governor design. : RQV250...950PA1253
Governor no. : 0 421 814 166

Cust. part No. : 1383215

Customer-spec. information
Customer : SCANIA
Motor : DSC 11.75

TEST BENCH REQUIREMENTS

Inlet Line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.20
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 261.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 8.0

Spreed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 14.0

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 16.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1006
guide sleeve
travel mm : 7.25
Tolerance mm : + 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.31
Tolerance mm : + 0.20

Rated speed rpm : 673
guide sleeve
travel mm : 4.96
Tolerance mm : + 0.25

MO2

Rated speed rpm : 420
guide sleeve
travel mm : 3.37
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1235

Rack travel in mm : 10.20
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 261.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 8.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : + 4.0

control lever
position degree : 112.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.20
Rated speed rpm : 995
Tolerance 1/min : + 5
Check
speed 1/min : + 10
rack travel mm : 4.00

Rated speed rpm : 1130
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 250
rack travel mm : 5.60
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.20
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 11.20
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.20
Tolerance mm : ± 0.05

Rated speed rpm : 500

M03

Pressure hPa : -
rack travel mm : 8.20
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 290
rack travel mm : 9.00
Tolerance mm : ± 0.15

Pressure hPa : 540
rack travel mm : 10.40
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50

Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 020

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
 : -2
Governor no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : +- 15.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : +- 1.5

Test Lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.00
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 20.50
Tolerance mm : +- 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : ± 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : ± 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : ± 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : ± 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1045
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : ± 4.0

control lever
position degree : 24.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.60

Testing:

Rated speed rpm : 250
rack travel mm : 7.70
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 11.20

MO7

Tolerance mm : ± 0.15

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : < 190
Rated speed rpm : > 150

Check
speed 1/min : < 210
Check
speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 278.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 021

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265
Governor no. : 0 421 801 800

Cust. part No. : 1380278

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.12

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 292.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 9.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 40.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 6.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1073
 guide sleeve
 travel mm : 4.82
 Tolerance mm : + 0.15

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.33
 Tolerance mm : + 0.20

Rated speed rpm : 990
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

Rated speed rpm : 364
 guide sleeve
 travel mm : 3.50
 Tolerance mm : + 0.10

Rated speed rpm : 490
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

Rated speed rpm : 1146
 guide sleeve
 travel mm : 5.50
 Tolerance mm : + 0.10

Rated speed rpm : 1610
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 16.40
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1500

Del. quantity
 cm³/1000 strokes : 292.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 9.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 47.0
 tolerance degree : + 4.0

control lever
 position degree : 107.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70

Rated speed rpm : 1045

Tolerance 1/min : ± 5

Check

speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1235

Tolerance 1/min : ± 15

Check

speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 87.0

tolerance degree : ± 4.0

control lever

position degree : 25.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 250

rack travel mm : 7.60

Tolerance mm : ± 0.10

Rated speed rpm : 355

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 600

rack travel mm : 12.70

Tolerance mm : ± 0.05

Rated speed rpm : 1000

rack travel mm : 12.70

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.70

Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 10.80

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250

rack travel mm : 11.30

Tolerance mm : ± 0.15

Pressure hPa : 620

rack travel mm : 12.30

Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 150

Rated speed rpm : < 190

Check

speed 1/min : > 130

Check

speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 288.0

Tolerance

cm³/1000 strokes : ± 4.0

Check tolerance

cm³/1000S. : ± 9.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 022

Injection pump
Pump designation : PES6P12QA32ORS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265-1
Governor no. : 0 421 801 801

Cust. part No. : 1380280

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHA3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 277.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 8.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.70
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 45.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 6.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1073
 guide sleeve
 travel mm : 4.82
 Tolerance mm : + 0.15

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.33
 Tolerance mm : + 0.20

Rated speed rpm : 990
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

Rated speed rpm : 364
 guide sleeve
 travel mm : 3.50
 Tolerance mm : + 0.10

Rated speed rpm : 490
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

Rated speed rpm : 1146
 guide sleeve
 travel mm : 5.50
 Tolerance mm : + 0.10

Rated speed rpm : 1610
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 16.40
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1500

Del. quantity
 cm³/1000 strokes : 277.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 8.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 38.0
 tolerance degree : + 4.0

control lever
 position degree : 106.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1045

Tolerance 1/min : ± 5

Check

speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : ± 15

Check

speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 87.0

tolerance degree : ± 4.0

control lever

position degree : 25.0

tolerance degree : ± 4.0

Setting point w/cut bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 250

rack travel mm : 7.70

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 355

Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 600

rack travel mm : 12.30

Tolerance mm : ± 0.05

Rated speed rpm : 1000

rack travel mm : 12.30

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.30

Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 10.80

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330

rack travel mm : 11.20

Tolerance mm : ± 0.15

Pressure hPa : 600

rack travel mm : 11.90

Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : < 190

Rated speed rpm : > 150

Check

speed 1/min : < 210

Check

speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 278.0

Tolerance

cm³/1000 strokes : ± 4.0

Check tolerance

cm³/1000S. : ± 8.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 023

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265-2
Governor no. : 0 421 801 808

Cust. part No. : 1385102

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.15

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
 Tolerance mm : + 0.05

 Del. quantity
 cm3/1000 strokes : 300.0

 Tolerance
 cm3/1000 strokes : + 1.0

 Check tolerance
 cm3/1000S. : + 9.0

 Spreed

 Tolerance
 cm3/1000 strokes : 8.0

 Check tolerance
 cm3/1000S. : 12.0

Rated speed rpm : 250

 Rack travel in mm : 7.60
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 40.0
 Tolerance
 cm3/1000 strokes : + 3.0
 Check tolerance
 cm3/1000S. : + 6.0
 Spreed
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1060
 guide sleeve
 travel mm : 4.82
 Tolerance mm : + 0.15

 Rated speed rpm : 250
 guide sleeve
 travel mm : 1.44
 Tolerance mm : + 0.20

 Rated speed rpm : 970
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

Rated speed rpm : 360
 guide sleeve
 travel mm : 3.50
 Tolerance mm : + 0.10

 Rated speed rpm : 490
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

 Rated speed rpm : 1134
 guide sleeve
 travel mm : 5.50
 Tolerance mm : + 0.10

 Rated speed rpm : 1600
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

 Rack travel in mm : 16.40
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm3/1000 strokes : 300.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 9.0
 Spreed
 Tolerance
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 47.0
 tolerance degree : + 4.0

 control lever
 position degree : 108.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1045

Tolerance 1/min : +- 5

Check

speed 1/min : +- 10

rack travel mm : 4.00

Rated speed rpm : 1240

Tolerance 1/min : +- 15

Check

speed 1/min : +- 20

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 87.0

tolerance degree : +- 4.0

control lever

position degree : 25.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 250

rack travel mm : 7.60

Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 355

Tolerance 1/min : +- 20

TORQUE CONTROL

Rated speed rpm : 600

rack travel mm : 12.90

Tolerance mm : +- 0.05

Rated speed rpm : 1000

rack travel mm : 12.90

Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.90

Tolerance mm : +- 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 9.80

Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 325

rack travel mm : 10.55

Tolerance mm : +- 0.15

Pressure hPa : 760

rack travel mm : 12.15

Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : < 190

Rated speed rpm : > 150

Check

speed 1/min : < 210

Check

speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 295.0

Tolerance

cm³/1000 strokes : +- 4.0

Check tolerance

cm³/1000S. : +- 9.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 025

Injection pump
Pump designation : PES6P120A32ORS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
 : -3
Governor no. : 0 421 814 178

Cust. part No. : 1383494

Customer-spec. information
Customer : SCANIA
Motor : DSC 915

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 300.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 8.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 40.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 7.89
Tolerance mm : +- 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : +- 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : +- 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : +- 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 300.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 8.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : +- 4.0

control lever
position degree : 120.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : ± 4.0

control lever
position degree : 25.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : ± 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 325
rack travel mm : 10.55

M23

Tolerance mm : ± 0.15

Pressure hPa : 760
rack travel mm : 12.15
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : < 190
Rated speed rpm : > 170

Check
speed 1/min : < 210

Check
speed 1/min : > 150

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 026

Injection pump
Pump designation : PES6P120A72ORS8045
EP type number : 0 412 926 028

Governor
Governor design. : RQV350...1100PA1305K
Governor no. : 0 421 815 967

Cust. part No. : 1388631

Customer-spec. information
Customer : SCANIA
Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 250.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 7.0

Spreed

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.10
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 30.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1165
 guide sleeve
 travel mm : 10.15
 Tolerance mm : + 0.15

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.00
 Tolerance mm : + 0.20

Rated speed rpm : 755
 guide sleeve
 travel mm : 6.14
 Tolerance mm : + 0.25

Rated speed rpm : 460
 guide sleeve
 travel mm : 4.07
 Tolerance mm : + 0.25

Rated speed rpm : 1400
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1250

Rack travel in mm : 10.70
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 250.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 7.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
 Rated speed rpm : 1145
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10
 rack travel mm : 4.00

Rated speed rpm : 1235
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : ± 0.10

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 10.65
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 1100

M27

Pressure hPa : -
rack travel mm : 7.10
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340
rack travel mm : 8.35
Tolerance mm : ± 0.25

Pressure hPa : 800
rack travel mm : 10.65
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.10
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98
Test oil : ISO 4713

Combination No. : 0 402 946 031

Injection pump
Pump designation : PES6P120A32ORS8050
EP type number : 0 412 926 032

Governor
Governor design. : RQ250/1000PA1342
Governor no. : 0 421 801 822

Cust. part No. : 1388694

Customer-spec. information

Customer : SCANIA
Motor : DSI 9E01
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 095

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 285

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1061
guide sleeve
travel mm : 4.72
Tolerance mm : ± 0.15

Rated speed rpm : 285
guide sleeve
travel mm : 2.17
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 4.50
Tolerance mm : ± 0.10

NO2

Rated speed rpm : 410
guide sleeve
travel mm : 3.50
Tolerance mm : ± 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 1670
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 108
Rated speed rpm : 600

Rack travel in mm : 16.00
Tolerance mm : ± 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 7.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 43.0
tolerance degree : ± 4.0

control lever
position degree : 105.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1058

Tolerance 1/min : + 8
 Check
 speed 1/min : + 10

 rack travel mm : 4.00
 Rated speed rpm : 1245
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 85.0
 tolerance degree : + 4.0

control lever
 position degree : 21.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

 CRT mm min. : > 8.00

Testing:

Rated speed rpm : 285
 rack travel mm : 5.20
 Tolerance mm : + 0.10

 rack travel mm : < 2.00
 Rated speed rpm : 390
 Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.30
 Tolerance mm : + 0.05

Rated speed rpm : 1000
 rack travel mm : 12.30
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

NO3

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.30
 Tolerance mm : + 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 10.40
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

 Pressure hPa : 275
 rack travel mm : 10.90
 Tolerance mm : + 0.15

Pressure hPa : 425
 rack travel mm : 12.10
 tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 170

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 214.0
 Tolerance
 cm³/1000 strokes : + 4.0
 Check tolerance
 cm³/1000S. : + 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 210.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 285

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.98
Test oil : ISO 4113
Combination No. : 0 400 863 023
Injection pump
Pump designation : PES3A95D410/3RS2905
EP type number : 0 410 893 996

Governor
Governor design. : RSV325...1250A5C861L
Governor no. : 0 420 232 624

Cust. part No. : 0423 1731 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F3L912/913_NEU
Power KW : 44.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

N05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 2
Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 11.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance

cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.35
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1339
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1510

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 473
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.07.98
Test oil : ISO 4113

Combination No. : 0 400 876 434

Injection pump
Pump designation : PES6A95D410RS2864
EF type number : 0 410 896 888

Governor
Governor design. : RSV400...1050A8C2263
 : -11L
Governor no. : 0 420 232 635

Cust. part No. : 87 801 607

Customer-spec. information
Customer : NH
Motor : P 396
Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

N08

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 137.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1095
rack travel mm : 10.60

Rated speed rpm : 1165
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1096
rack travel mm : 10.60

Rated speed rpm : 1166
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1097
rack travel mm : 10.60

Rated speed rpm : 1167
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 10.60

Rated speed rpm : 1168
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1099
rack travel mm : 10.60

Rated speed rpm : 1169
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1100
rack travel mm : 10.60

Rated speed rpm : 1170
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.00
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 450
rack travel mm : 5.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 585
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 13.80
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 11.20
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 12.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.85
Tolerance mm : + 0.05

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : + 8.0
Check tolerance
cm³/1000S. : + 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.98
Test oil : ISG 4113

Combination No. : 0 400 876 437

Injection pump
Pump designation : PES6A95D320RS2806
EP type number : 0 410 896 898

Governor
Governor design. : RSV375...1125A0C900R
Governor no. : 0 420 233 353

Cust. part No. : 8368 54720

Customer-spec. information
Customer : SISU
Motor : 620D
Power KW : 88.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery differende

Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 74.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 375

Rack travel in mm : 4.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.00
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 3.50
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 375
rack travel mm : 4.00
Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 455
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : ± 0.05

Rated speed rpm : 980
rack travel mm : 9.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.98
Test oil : ISO 4113

Combination No. : F 002 A02 097

Injection pump
Pump designation : PES6A100D320/3RS3517
EP type number : F 002 A10 036

Governor
Governor design. : RSV550...750A7C983R
Governor no. : F 002 A2C 027

Cust. part No. :

Customer-spec. information
Customer : TATA
Motor : 6BT
Power Kw : 86.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

M15

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240
-300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 730

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Rack travel in mm : 4.95
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.75

CONTROL LEVER

control lever
position degree : 83.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 750
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 780
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 850

rack travel mm : 4.00
Rated speed rpm : 780
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 77.0

N16

tolerance degree : ± 4.0

Control lever difference
Grad : 11.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 3.95
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT min min. : > 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 4.95
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 730
rack travel mm : 12.20
Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.40
Tolerance mm : ± 0.50

LOW IDLE

Rack travel in mm : 4.95
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.07.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 108

Injection pump
Pump designation : PES6A95D12ORS2916
EP type number : F 002 A10 010

Governor
Governor design. : RSV425...1000ADC981R
Governor no. : F 002 A20 256

Cust. part No. : 328 4546

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 102.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N17

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 9.50
Tolerance : +- 0.10
Check
tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.30
Tolerance mm : +- 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	98.2
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	4.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.0
<hr/>	

Rated speed rpm : 425

Rack travel in mm :	5.05
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	18.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	6.0
Check tolerance	
cm ³ /1000S. :	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	FREE
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

N18

Aneroid pressure	
hPa :	900
Del. quantity	
cm ³ /1000 strokes :	98.2
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	4.0
Check tolerance	
cm ³ /1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	95.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.30
Rated speed rpm :	1040
Tolerance 1/min :	+ 5

rack travel mm :	4.50
Rated speed rpm :	1095
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1225

rack travel mm :	4.50
Rated speed rpm :	1105
Tolerance 1/min :	+ 15

LOW IDLE

control lever	
position degree :	78.0
tolerance degree :	+ 4.0

Control lever difference	
Grad :	17.0
tolerance degree :	+ 6.0

Setting point w/out bumper spring

Rated speed rpm :	425
rack travel mm :	4.05
Tolerance mm :	+ 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.05
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.30
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.80
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 11.70
Tolerance mm : ± 0.20

Pressure hPa : 500
rack travel mm : 11.20
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 106.2

N19

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rated speed rpm : 425

Rack travel in mm : 5.05
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.07.98
Test oil : ISO 4113

Combination No. : 0 401 846 990

Injection pump
Pump designation : FE6P120A32URS3118
EP type number : 0 411 826 726

Governor
Governor design. : RQV250...1100PA920
: -9
Governor no. : 0 421 814 105

Cust. part No. : 425663-PO? (P03)

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD 102 KD
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

N20

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.70

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : +- 2.5

Check tolerance
cm³/1000S. : +- 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1146
guide sleeve
travel mm : 7.80
Tolerance mm : +- 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.19
Tolerance mm : +- 0.25

Rated speed rpm : 1081
guide sleeve
travel mm : 6.82
Tolerance mm : +- 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : +- 0.25

Rated speed rpm : 437

guide sleeve
travel mm : 3.71
Tolerance mm : +- 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : +- 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 223.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : +- 4.0

control lever
position degree : 117.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 12.25
Rated speed rpm : 1135
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 9.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT min min. : > 6.20

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.25
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.25
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : + 0.15

MEASUREMENT

N22

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 3.70
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : + 0.15

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.07.98
Test oil : ISO 4113

Combination No. : 0 402 046 861

Injection pump
Pump designation : PE6P11GA32CRS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQ325/1300PA1150
Governor no. : 0 421 801 716

Cust. part No. : 1284420/6

Customer-spec. information
Customer : DAF
Motor : NS156M
Power Kw : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

N24

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1351
guide sleeve

travel mm : 6.37
Tolerance mm : ± 0.10

Rated speed rpm : 325
guide sleeve

travel mm : 1.99
Tolerance mm : ± 0.10

Rated speed rpm : 1300
guide sleeve

travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 427
guide sleeve

travel mm : 3.54

Tolerance mm : ± 0.10

Rated speed rpm : 590
guide sleeve

travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1570
guide sleeve

travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109

Rated speed rpm : 650

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 93.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.85

Rated speed rpm : 1345
Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1450
Tolerance 1/min : ± 15

Check
speed 1/min : + 20
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.85
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85

N26

Tolerance mm : + 0.05
Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 7.35
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : + 0.05

Pressure hPa : 200
rack travel mm : 8.55
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

rack travel mm : 11.85
Tolerance mm : + 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 2.5
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet